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NATURAL SEMANTIC FORMALISMS? - A DISCUSSION OF THE
NATURALNESS IN WIERZBICKA'S APPROACH TO LEXICAL SEMANTIC
ANALYSIS.

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Geboren am: 08.02.1982, Karl-Marx Stadt

MAGISTERARBEIT

Eingereicht am: 11. April 2008

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1 INTRODUCTION

Meaning is a crucial aspect of language. For some linguists it is at "the center of the linguistic quest to understand the nature of language and human language abilities" (Goddard 1998c:1). As any other linguistic discipline, semantics has controversial points, a great range of approaches and varying conceptions of specific issues. Semantics is often thought of as the problem child of linguistics. It deals with the meaning of words. Simultaneously words are used to describe and analyze them. The circular and tautological character of the exercise becomes obvious. A solution, if there is any, can only be brought about by a principled metalanguage. This might be one of the few aspects which are generally agreed upon among linguists. In fact, not having such a metalanguage is seen as "one of the obstacles to the realization of a scientific semantics" (Riemer 2006:66). Then again, what an adequate metalanguage has to be like depends upon the framework in which it is put to use. Thus, the construction of a proper metalanguage turns out to be one of the most difficult tasks in linguistic semantics.

An interesting approach to lexical semantics, and the topic of this paper, is the theory initiated by Anna Wierzbicka, called the Natural Semantic Metalanguage (henceforth NSM). Wierzbicka has been developing the NSM for about forty years and she has been able to attract colleagues such as Cliff Goddard to join the research program. Since the 1980s, he has been the main contributor to Wierzbicka's work and has been inseparable from the theory ever since. The approach shares many ideas about the nature of meaning with other contemporary approaches. Nevertheless, it cannot be said that it is simply a continuation of any particular previous approach. Apparently, its origins lie further back in time because ideas of thinkers of the Age of Enlightenment, such as Leibniz' idea of an "alphabet of human thought", surface again in the approach. They have considerably influenced the argumentation as well as the theoretical background (cf. Wierzbicka 1996).

1.1 Motivation for the Paper

The NSM approach starts off with desirable goals in descriptive semantic analysis, which try to avoid common failures of other methods. Two important catchwords are circularity and terminological obscurity, which are seen as major obstacles to meaningful semantic analysis. They are inherent to lexicography and semantic analysis based on formal logic. In a nutshell, NSM tries to avoid circularity by using a restricted set of sixty-three semantic primitives in the analysis. As the term already suggests, the NSM primitives are not definable. Terminological obscurity is dealt with by grounding the semantic primitives in natural language. Moreover, to be admitted as a semantic primitive a potential candidate has to prove to be a lexical universal as well. Some of these methodological assumptions serve as a point of departure for this paper.

On the one hand, the very name of the approach suggests naturalness which refers to the claim that the NSM can be understood via ordinary language. Sixty-three primitives are said to be sufficient to analyze all meanings of a language, that is, it is taken to be comprehensive. Moreover, Wierzbicka and Goddard's explications are said to be intuitively verifiable (cf. Wierzbicka 1995b:156). On the other hand, the NSM is declared a formal metalanguage (cf. Wierzbicka 2003:07) and is "arguably approaching the standard expectations of a formalized metalanguage for natural language" (Goddard 2006a:544). Since theories usually tend to go with either one of these methodological positions, one usually has to choose "between the theoretical rigor combined with descriptive poverty, and descriptive richness combined with a lower degree of theoretical control" (Cruse 1995:xiii). The NSM approach, however, is an attempt to join the two methodological positions into one single theory.

The main motivation for this paper is derived from the NSM's claim of methodological advantage over other theories and its definitional success. Wierzbicka and Goddard claim to have developed "one of the most refined, productive, and comprehensive systems of semantic analysis" (Goddard 2006a:544). The claim of methodological advantage rests, in a way, on the naturalness of the NSM vocabulary. The primitives are taken to be intuitively understandable and should have the same expressive power as a fully natural language. Because of the naturalness, NSM

analyses, which are commonly referred to as explications, are said to be testable. The empirical testability makes up the methodological advantage of the NSM. At the same time, Wierzbicka and Goddard rely heavily on introspection as a method to elicit data. Empirical testing seems to be reserved for the identification of the primitives across languages. To see, what a semantic test of the actual explications will bring, is one aspect of the motivation for this paper. It will be interesting to see how speakers deal with the explications and whether or not the definitions are indeed intuitively accessible to native speakers.¹ Since the use of natural language in the analysis is associated with intelligibility, it is assumed that explications could be verified in that way by *any* native speaker. This aspect of the efficiency of the explications is a point of interest. It will eventually lead to the discussion of 'naturalness' in the NSM approach in more general terms.

Why is the 'naturalness' of central importance to the theory? First of all, it nicely ties in with the allover argumentation. That is, the naturalness is the distinctive feature, which sets the NSM apart from other approaches. Its naturalness, that is, the vocabulary based on ordinary language is thought to make the analyses testable. This is, absolutely necessary for the NSM because only if the explications can be tested, the definitional success of the explications can be verified. Eventually, if the hypothetical semantic primitives are to have any validity, i.e. cognitive reality, they depend on the success of the explications. Only then can their existence be justified. Secondly, the NSM is referred to as an artificial language (cf. Wierzbicka 2003:7) which enables rigorous analysis and which brings out subtle differences between word meanings and makes it possible to "define the indefinable" (Goddard 2002:7). This apparent opposition provides the further motivation for investigation.

1.2 Hypothesis

The two methodological positions which are combined in the NSM are perceived to create contradictions. While the NSM's name suggests a *natural* semantic

¹ The notion of 'native speaker' is not an uncontroversial one. As the term is used by Anna Wierzbicka and Cliff Goddard as well, it will be used in this paper in the sense of a person who "has intuitions (in terms of acceptability and productiveness) about his or her Grammar 1" (Davies 1991:148).

metalanguage, formalization and standardization are claimed as well. This is the reason why the title of this paper is "Natural Semantic Formalism". The advantages of both methodologies are supposedly combined and result in 'theoretical rigor' *and* 'descriptive richness' (cf. quote in 1.1). Additionally, NSM analyses are empirically testable, because semantic primitives are based on ordinary language. They are, thus, claimed to be intuitively intelligible. Here, another aspect is important. NSM does not distinguish between specialist and non-specialist, that is, the trained linguist and the lay person on the street.

The underlying assumption of this paper is that the NSM explications are only partly accessible to the intuition of native speakers. That is, although the analysis consists of natural language and the speaker readily understands every word in isolation, the composite meaning is much more difficult to comprehend. Apart from the supposed "clarity and simplicity" of the vocabulary, there are other factors influencing comprehension, such as the complexity of the definition. Furthermore, the subtle differences in meaning are not efficiently brought out in the explication in a way that the participants recognize the difference as such.

This does not exclude the possibility, that the paraphrases *are* a useful tool in lexical semantic analysis and that one can learn many things about meaning from them. For a trained linguist, who is familiar with the structure of the explications, the analyses, especially those of abstract concepts, will be very telling. However, the verifiability through the intuition of native speakers cannot be taken for granted. Therefore, the NSM cannot be claimed to avoid "the crippling obscurity which afflicts most other semantic methods" (Goddard 1997:198). Methodological priority or the claim that the NSM "submits itself to a higher standard of verifiability than any other rival method" (Goddard 2002:11) cannot be upheld.

1.3 Chapter Outline and Scope

After a brief overview of the history of Cognitive Linguistics at the beginning of chapter two different approaches will be introduced. These are not mutually exclusive. They have been selected because particular aspects in the study of

meaning will surface again in later chapters. In the last section of the chapter (cf. 2.3) metalanguages in semantic analyses will be commented on. A classification will be established which can accommodate the NSM's claim for formalization and naturalness. This arbitrary classification will be the basis for further discussion. Chapter three will outline assumptions of the NSM framework. Here, the considerations of chapter two will enter in order to determine the NSM's position in semantics. It has to be noted that not all aspects can be described at due length because this would go beyond the scope of this paper. Therefore, chapter three will be limited to the most central notions in NSM semantic analysis. Chapter four will focus on two more specific claims, which are crucial for the argumentation of this paper. It will be specified what the naturalness of the NSM consists of and how this is linked to the definitional success, i.e. explanatory effectiveness. In chapter five, a possible way of testing explications will be carried out. The test is expected to give indications about the explanatory success, but also about the feasibility of a semantic test of NSM explications in general. The consideration will be integrated into the final discussion in chapter six. Several aspects of the naturalness, such as the NSM primitives, the explications and the testability will be selected and discussed. The results of chapter five will be taken into account. A summary of the argumentation and the discussion can be found in chapter 7.

The NSM has undergone considerable development since it was proposed for the first time. The theory started out as a method to analyze lexical meaning. By now, research has extended into other areas such as the syntactic properties of the primitives or cross-cultural comparison. However, the origins of the NSM lie in lexical semantic analysis and the core assumptions are rooted in this field. In other words, the primitives are the basis opening the field to research in the other areas. For this reason, the considerations and the argumentation of this paper will be restricted to lexical semantics. Furthermore, the theory started out in English and explications of English concepts have been worked on for the longest period of time. Therefore, the semantic test in chapter five and the discussion will be limited explications of the English vocabulary.

2 APPROACHES TO LEXICAL SEMANTICS

Nowadays, the study of meaning in language plays a role in most fields of linguistic research in one way or the other. Even so, "once there was no semantics in linguistics and no linguistics in semantics" (Katz 1996:599). This statement does not only indicate that semantics might not always have been of primary interest in the study of language. It also points to the fact that there are different conceptions of semantics in various areas of academic inquiry. Developments in semantics have been brought about not only by linguistic considerations, but also by philosophical and psychological ones. Thus, despite the fact that there is a frequent exchange of ideas, a distinction has to be made between linguistic semantics and semantics in other disciplines such as logic and philosophy. In order to understand the NSM's relation to existing views of meaning a quick look at the historical developments will be necessary.

2.1 A Short Historical Overview

The origins of semantics date back to the ancient world of Plato and Aristotle. Unfortunately, such an extensive summary will not be possible here. The following considerations will include modern linguistics starting at the end of the 19th century. Within this time frame roughly four phases can be identified. These are

- (1) prestructuralist semantics
- (2) structuralist semantics and nestructuralist semantics
- (3) generativist and negenerativist semantics and
- (4) cognitive semantics. (cf. Geeraerts 2002:23)

The establishment of lexical semantics as a separate subdiscipline in the study of linguistics marks the beginning of the prestructuralist phase in the 1870s. The main field of attention was the diachronic study of meaning, i.e. the study of semantic change. Change of meaning, then, was narrowed to the change of lexical meaning. Moreover, meaning was seen as a kind of thought or idea. Metonymy, for example, was not just a linguistic notion as such but a cognitive capacity of the mind (ibid.).

In reaction to the prestructuralist's positions structuralism rose during the 1930s. Jost Trier with his influential publication *Der Deutsche Wortschatz im Sinnbezirk des Verstandes. Die Geschichte eines Sprachlichen Feldes* is commonly associated with the rise of this school of thought. Furthermore, Leo Weisberger's *Die Bedeutungslehre – ein Irrweg der Sprachwissenschaft?* was one of the first theoretical and methodological works within the new framework. Both criticized the preexisting notions of meaning on the grounds that semantics should be studied synchronically. At the same time, they saw the study of linguistic meaning as separate from the study of its representation in the human mind. As a consequence, an autonomously linguistic way of studying meaning required its own methodology (cf. Geeraerts 1988). Semantic structures were at the center of linguistic investigation and, therefore, psychological factors were left aside as a whole.

Structuralism was a reaction to the prestructuralist conception of meaning and, hence, they stood in direct opposition to each other. This was different with generativism which succeeded the structuralist period. Generativist semantics gave the study of the lexicon new features, nevertheless there seemed to be a methodological continuity between generativism and structuralism (cf. Geeraerts 2002). Generativists, as did structuralists, continued to treat the study of language autonomously. Ferdinand de Saussure's notion of *langue* and *parole* surfaced again as the distinction between *competence* vs. *performance* (cf. Newmeyer 1997). What was new was the mentalist stance, which expressed that the nature of linguistic structure was seen as connected to the human mind. In his 1957 publication *Syntactic Structures* and his following work, Noam Chomsky placed syntax at the heart of linguistic investigations. His first accounts of the generative approach in *Syntactic Structures* did not address the issue of semantics (cf. Katz 1996:600). Subsequently, the "semantic gap" was filled by Jerry A. Fodor and Jerrold J. Katz in the first half of the 1960s and was later developed further by Katz. Both considered the "semantic component of generative grammar as necessary to complete the picture of the ideal speaker's knowledge" (ibid:600). Their theory was neither a straightforward continuation of structuralism nor of generativism. Instead, it combined aspects of both traditions. It made use of three distinct kinds of structural relations which could already be found in structuralist semantics: semantic similarity, unanalyzed semantic relations and syntagmatic relationships. It favored the

formalization of the descriptive system and accommodated the mentalist conception of meaning, as it had been put forth by Chomsky (cf. Newmeyer 1997:27). The model was a "singular combination, within the framework of generative grammar, of a basic structuralist methodology, a mentalist philosophy of language and a formalized descriptive apparatus" (Geeraerts 1988:27). According to Geeraerts this explains the attractiveness of the model and spawned further developments in the history of lexical semantics (cf. 2002:25, 1988:24). Thus, he speaks of a "pivotal function" of the Katzian approach. On the one hand, the pretensions to rigorous formalization and the compensation of inadequacies of the theory have led to a movement towards predicate logic and further formal interpretations. This again brought about a shift of focus from lexical semantics to sentential semantics (cf. Geeraerts 1988:28). The mentalist stance, on the other hand, resulted in a return to the questions and interests of the prestructuralist tradition such as the incorporation of the study of semantic change. Furthermore, it led to the establishment of the flexible framework of Cognitive Linguistics.² As the Katzian approach attributed psychological reality to the semantic descriptions it followed that psycholinguistic data, such as reaction times, should be able to be included in the evidence. Thus, the "autonomist methodological ideal of structuralism" (Geeraerts 2002:27) was abandoned in Cognitive Linguistics. Although, it is not a single unified approach, Cognitive Linguists share a variety of basic assumptions, such as that linguistic abilities are part of general cognitive abilities of the human mind.

² Geeraerts (2006:3) distinguishes Cognitive Linguistics from cognitive linguistics. While the latter refers to linguistic theories which view language as a mental phenomenon the former constitutes a loose framework whose adherents agree on some very basic notions. In this view, Cognitive Linguistics is one form of cognitive linguistics. This position will also be adapted throughout the paper.

2.2 Aspects of Meaning

In the following sections, different conceptions of meaning will be presented. For reasons of space, however, a brief overview can be given at best. Various aspects of conceptions of meaning are selected which will reoccur later at different stages, especially throughout the presentation of the NSM. It has to be mentioned that the presented conceptions are not necessarily mutually exclusive.

2.2.1 The Referential Approach

The referential approach to meaning directly relates language to the world or to an external reality. Accordingly, the meaning of a word is what it denotes (cf. Saeed 2006:30). This approach is often criticized for a variety of reasons. Since not all words have a concrete referent, it would follow that many words do not have a meaning at all. For instance, the word 'unicorn' is not part of the external reality. Still, we can understand and use the word correctly. Some referents even have two meanings. The most famous and most frequently quoted example probably is Gottlob Frege's example of the 'morning star' and the 'evening star'. Both have the same referent, namely which is 'Venus'. For that reason, Frege had introduced the notions of sense and reference as two different aspects of semantic knowledge (cf. Saeed 2006:32). Meaning then is created by the combination of the two aspects.

2.2.2 Word Meanings as Conceptualization

A more common view is that word meanings exist in people's minds as part of a conceptual system. In this view a word meaning is represented in the mind as a concept. In language, it is expressed through a lexical form, or the lexicalized equivalent of a concept. This entails that there has to be a kind of link assigned between the linguistic form and the concept itself. Furthermore, concepts are "organized bundles of stored knowledge which represent an articulation of events, entities, situations, and so on in our experience" (Cruse 2004:125). They are seen as a basic feature of human cognition because only by packaging ones experiences into such categories, or concepts, it becomes possible for us store them and later recognize similar situations, events or entities. Nevertheless, not all concepts in people's minds have to be lexicalized in every

language (cf. Matthewson 2003). For instance, the Norwegian *døgn* which refers to 'the succession of one day and one night' is lexicalized in Norwegian but not in English (cf. Bakken 2006:106).

2.2.3 Definitions

There is disagreement on how concepts are represented in the mind of speakers. A traditional, but by no means uncontroversial approach, which is often linked to Aristotle, assumes that there is a basic meaning for each category. This could in principle be expressed by formulating a definition. It also could be expressed by a set of necessary and sufficient conditions, that is, criteria, or features for that matter. On the one hand, they specify which information is needed to decide when some entity is part of a category. On the other hand, they determine which features are enough to classify something as belonging to a category (cf. Saeed 2006). This results in "a list of bits of knowledge" (ibid:32). In this way the hard core or 'true meaning' of a word can be specified. For instance, in order for X to be a suitable example of the category GIRL it would have to meet the following criteria:

X is human
X is female
X is young (cf. Cruse 2004:127)

Even if one accepts these features to be the ones the word GIRL is composed of, not all word meanings are as easily to define. Jean Aitchison quotes William Labov's famous example of the classification of *cups*, *vases* and *bowls* (cf. 2006:48). In his experiment he presented students with different types of containers which they were supposed to identify. While they agreed on certain shapes, such as thin containers without handles being vases or low flat ones being bowls, they were not so sure about those containers which were in between. That is, if a handle was attached to a long and thin container or to a low and flat one, would this still be called a vase or a bowl, respectively? Not only did the informants disagree with one another on those examples, they also varied their own responses according to what was inside the container. Thus, Aitchison reasons: "Word meanings cannot be pinned down, as if they were dead insects. Instead, they flutter around elusively like live butterflies" (ibid:47). In this view, as opposed to the definitional approach, word meanings are rather fuzzy in nature.

2.2.4 Fuzziness of Meaning and Prototype Theory

Adherents to the view that meanings are fuzzy in nature believe that meanings have vague boundaries, fuzzy edges and vary contextually (cf. Cruse 2004:128). Evidence for this comes from the phenomenon 'family resemblance'. Obviously, the term was created by analogy to the similarities among family members. More often than not, members of the same family share certain features without looking completely alike (ibid:130). This connection is frequently explained by quoting Wittgenstein's example of the word *game*. Although many games have some aspects in common, there is no single feature that characterizes all games. Some games are about winning and losing, for example, but this feature cannot be extended to the whole of the category. The same applies to the number of people involved, which differs from one game to the next. *Patience* can be played alone while some games on the Internet are likely to have several million players. No feature can be found which is common to all games. Many words behave in the same manner.

It has been suggested that people deal with fuzzy meanings by assigning a typical example to each word. This assumption is part of the prototype theory, which was first developed by Eleanor Rosch in the 1970s and which has been very influential in the field of Cognitive Linguistics ever since. According to this approach, natural conceptual categories are structured around the 'best' example or prototype of the respective categories (cf. Cruse 2004). Consequently, whether or not an item belongs to a category depends on the degree to which it resembles the prototype. This can be tested by having informants estimate how good of an example something is. This can be done by assigning numerical values. Although there is much variation among the ratings of informants, over all tendencies for the 'best example' can be statistically established among a culturally and linguistically homogeneous group. It follows, from a cross-cultural perspective that prototypes are likely to vary. For example, Cruse (cf. 2004:130) points to the fact that the superordinate category FRUIT in relation to the basic level category DATE would be rated quite differently within a British context as opposed to a Jordanian context. While in the former DATE would not be considered a very good example of FRUIT, in the Jordanian context it might be rated the best example. As many prototype theorists remain uncommitted to the nature of representation of the categories, recent treatments of prototypes include features. At the

same time, these are neither classical features nor lists of necessary or sufficient conditions. Instead, they make predictions of which features the best example of a category will have.

2.2.5 Universalism and Relativity

When dealing with meanings and concepts, the question of their relationship to language and culture necessarily arises. There are two major positions, relativism and universalism, which have inspired much debate. According to linguistic relativism, which was popularized by Edward Sapir and Benjamin Whorf, language determines our thoughts. (cf. Jaszczolt 2002). In this view, concepts, which are lexicalized in a language, restrict possible ways of thinking (cf. Saeed 2006). Since languages are tied to different cultures, there should be fundamental cultural differences in thinking. In the universalist-relativist debate this approach has been criticized for different reasons. One of them is that thinking and speaking involve different levels of representation. Moreover, there is evidence that thoughts exist in which no language is involved (ibid.). Furthermore, it has become obvious from linguistic analysis, that language understates meaning. People seem to have more concepts than words. Therefore, not all meanings expressed by speakers are merely a result of the addition of lexical items.

Opposed to linguistic relativism is universalism. It presumes that the language of thinking is determined by thought and cognition (cf. Jaszczolt 2002). Thus, radical differences in the way people across cultures think are not believed to exist. One version of this view asserts "that there is some universal set of basic atoms of meaning known as 'semantic primitives' which are combined in different ways in different languages" (Aitchison 2006:77). That is, complex meanings emerge when simpler meanings are put together. At the same time, breaking up the meanings of primitives is not necessary because they are seen as unanalyzable (cf. Cruse 2004). Therefore, the smallest units in semantics analysis are the atoms of meanings, which are also called semantic components, markers or semantic primitives. Adherents of this point of view are Katz, Fodor and Paul M. Postal, Ray Jackendoff, Leonard Talmy and Anna Wierzbicka. Despite the shared view that semantic primitives exist, there is "quite radical disagreement on such topics as the nature of semantic features, how they are to be discovered and verified, how they combine, whether all aspects of word meaning are

metalanguage denotes the language which is used to analyze the object language. In lexical semantics, the object language is a specific natural language.

2.3.1 Terminological Considerations

The following sections will discuss some questions with regard to the distinction between formal metalanguages and natural metalanguages. The term 'formal language' is used in a range of different (but related) academic contexts and, thus, can be interpreted in different ways. Traditionally, formal languages, that is languages which have been "deliberately constructed by logicians, computer scientists, etc. for philosophical or practical purposes" (Lyons 2005:200), have been studied and interpreted in formal semantics or the semantics of logic. Logicians are not much interested in the study of language as such, but in its logical arguments. If one knows the structure of a language it can help to develop correct deduction rules (cf. Allwood/Anderson/Dahl 1993).

Notwithstanding, the concept of formal languages is no longer used by formal semanticists alone. Recently, the tools of formal semantics have been put to use in the study of meaning of natural languages, because systems of logic can be used to account for different characteristics of language structure (cf. Cann 1993). This is the subfield of formal linguistic semantics (cf. Lyons 2005:202). Hence, it is a subfield of linguistic semantics which makes use of concepts and methods of formal semantics. The term 'formalization' frequently turns up in other theories of linguistic semantics to describe the methodology. Wierzbicka, for instance, argues that the NSM "can be viewed as a formal semantic metalanguage" (2003:7). Compared to other theories, such as Katz' componential approach or Jackendoff's conceptual structure, which directly derive from the generativist tradition, there clearly is a difference in the degree of formalization.

This difference raises several essential questions. The first one to ask is, what makes a formal metalanguage formal? How can differing degrees of formalization be pinned down? Certainly, some criteria would have to be established. Randy A. Harris considers 'formal' as necessary for linguistics and he defines it as "nothing more than codified abstraction" (1993:13). Yet, in some ways, this confuses matters even more. If 'formal' stands for codified abstraction, does that mean that all formal metalanguages are

at the same time abstract metalanguages. If not, then what is the dividing line between the two?

If drawing this dividing line is possible at all, the distinction between a wide and a narrow context should be introduced. In a narrow sense, theories that use methods of formal linguistic semantics would be considered formal in the proper sense of the word. However, in the broader sense it would be thought of restricting and standardizing a metalanguage (cf. Wierzbicka 2003:7). 'Formal' includes any regularization or alteration of the metalanguage. Abstractness, depends on the kinds of restrictions, such as the rules for combination as well as the vocabulary used, and the extent to which they are realized. This, in turn, would determine the level of abstraction. As a result the term 'abstraction' itself would become gradable. This partly answers the question whether or not formal metalanguages are at the same time abstract. Some formal metalanguages are more abstract than others, as it was demonstrated in the previously quoted examples of Jackendoff's and Wierzbicka's semantic analyses (cf. 2.3). Withal, a new question appears instantly, because now one would have to state what determines the degree of abstraction. This can be done by evaluating the vocabulary, which the metalanguage uses. It seems intuitively obvious, that the use of symbols or variables is more abstract than lexemes taken from an ordinary language, which people use in daily life. This can be justified on the grounds that, all symbols or variables "ultimately have to be explicated in natural language" (Meyer 1997:98). In this line of argumentation, any restriction, modification or standardization turns a metalanguage into a formal language. Simply the degree of abstraction varies and with it the degree intelligibility.³ Of course, this classification of the relationship between formal, abstract and natural metalanguages is somewhat arbitrary. However, it serves the purpose to differentiate the NSM as a formal language from more abstract metalanguages like Jackendoff's. It will also help to determine, in which respect the NSM can be considered formal and in which it is natural. At the same time, these assumptions will have consequences for the conception of natural metalanguages, as well.

³ The notion 'intelligibility' is understood in this paper as understandability and accessibility. However, the use of this concept by Wierzbicka and Goddard is criticized by Nicholas Riemer. He argues that intelligibility can not be measured on an absolute scale because it is subjective and must be seen as something subjective (Riemer 2005:81).

Natural metalanguages are equally difficult to define. The question is what makes a natural metalanguage different from a natural language. Lets say a natural language is "any language which is or has been used by human beings as their primary means of communication" (Kempson 1992:3) and which "is acquired by its users without special instruction as a normal part of the process of maturation and socialization" (Lyons 1991:1). Then again, a natural metalanguage is in the widest sense a "language which is used to make [...] descriptive statements" (Lyons 1993:11). Thus, when using English to describe or explain aspects of French, English is the metalanguage and French the object language. Equally, English can be used to make descriptive statements about English, such as in the sentence *He was speaking out loud*. Since no further restrictions or standardization necessarily have to be made, the metalanguage would be as close as possible to ordinary language. The two could, in principle, be identical.

Coming back to the argumentation of the previous paragraph, with regard to natural metalanguages, it follows that there are no truly natural metalanguages. Exceptions are those which did not undergo any modifications, as in the example just mentioned. This is supported by the fact that a "metalanguage is the product of the analysts mind" (Allan 2006:31) and thus, cannot be entirely natural. Moreover, "formalization involves regimentation of ordinary language even when it is grounded in and based upon the grammar and vocabulary of ordinary language" (Lyons 1993:11).

As a result, in this paper, formal metalanguages are understood to be those which have undergone some kind of standardization in terms of vocabulary and syntax. Therefore, formal languages differ in their degree of abstractness. The abstractness depends on the nature of the vocabulary and the complexity of the rules of combination. Accordingly, natural metalanguages are only those used in descriptive statements of every day discourse, without any restrictions.

2.3.2 Advantages and Shortcomings

The above explanations grossly neglected the fact that metalanguages are constructed and used for different purposes in linguistics. Not all theories are preoccupied with lexical semantic analysis. In fact, many abstract metalanguages which

derive from formal semantics are primarily concerned with sentential semantics. In the following section common arguments in favor of abstract languages and its counterarguments will be briefly reviewed.

Generally, abstract systems, such as those constructed by logicians, maintain the reputation of being explicit and rigorous. Hence, they comply with scientific standards (cf. Geeraerts 1988). Since sentences from natural language are inherently vague, ambiguous, structurally obscure and context dependent abstract languages are readily adopted in the study of natural languages (cf. Allwood/Anderson/Dahl 1993). Thus, the principal intention behind the construction of an abstract metalanguage for linguistics is to find a way to avoid these troublesome features.

One advantage of the translation of an object language into an abstract metalanguage is that every step presupposes explicit definitions of the vocabulary and the syntax of the metalanguage. This enables standards of rigor "that tend to be ignored when using an informal metalanguage such as a natural language" (Allan 1986:266). Furthermore, it must be seen as an advantage, that these standards result in precise analysis, which are normally much clearer, shorter and less likely to be misinterpreted. This is so because one is

forced to examine ordinary language statements with more care than one might otherwise have done; and, as a consequence, instances of ambiguity or imprecision may be detected which might otherwise have passed unnoticed. (Lyons 1993:139).

Finally, abstract metalanguages are appreciated for they enable to prove or disprove a theory. It is a way to avoid false conclusions (Cann 1993:17, Lyons 1993:139).

Nonetheless, the above arguments are repudiated by researchers, who see these advantages as counterbalanced by the shortcomings of abstract languages. There are (at least) three common charges, which make the less abstract metalanguages the preferable choice. First of all, there is the charge of obscurity. The object language has been translated into the metalanguage, which has its own vocabulary. This vocabulary has been assigned arbitrarily and thus, somebody else, who intends to understand the abstraction, will have to translate it back into ordinary language in order to comprehend it (cf. Allan 1986:268). Secondly, from this disadvantage directly follows the charge of unintelligibility. According to that, the obscurity of abstract metalanguages is said to

prevent that semantic metalanguages can serve their function, which is to permit new insights and to state meanings without circularity and arbitrariness (cf. Wierzbicka 1995a). In this view, a metalanguage has to be intelligible in order to fulfill these requirements, and according to Wierzbicka "artificial languages various 'markereses' and 'featureses' have long been shown to be unequal to the task" (ibid:239). The reason for this, and a third objection to abstract metalanguages, is their testability. Although it is argued by proponents of abstract languages that they permit to check a theory (cf. Cann 1993:17, Lyons 1993:139, Matthewson 2003) on theoretical grounds, the counterargument is, that the formulas cannot be submitted to the intuition of native speakers and be tested empirically. The argument goes that "if elements of a semantic analysis are regarded as "merely abstract constructs" then we deprive ourselves of the simplest way of testing the analysis" (Goddard 1998c:66).

3 THE NSM APPROACH TO LEXICAL SEMANTICS

The NSM has been developed by Anna Wierzbicka for over thirty-six years. It consists of a set of six-three semantic primitives,⁴ which are undefinable and are taken from natural language. At the same time, the primitives are claimed to be universal. This means that every primitive must have an equivalent in all languages. Wierzbicka's interest in the search for universal primitives was inspired by a lecture in 1965 by Andrzej Boguslawski. He took his motivation from the work of Leibniz, who was convinced that an 'alphabet of human thought' was the essential basis for human cognition (cf. Goddard 1998c:324). Subsequently, Wierzbicka began to develop a hypothesis which included a set of primitives and which was to be tested by trial and error.

In a nutshell, the NSM tries to establish the meaning of a word by means of

⁴ Goddard and Wierzbicka mostly do not name an exact number. They mostly refer to as being in the "mid sixties" or "about sixty primitives". This is certainly owing to the fact that primes are open to disconfirmation. However, according to the most recent table of the proposed primes at the UNE web page, the number amounts to sixty-three.

reductive paraphrase, which is an explication in the form of a definition. The vocabulary of the NSM is made up of the semantic primitives. In this way, Wierzbicka intends to avoid the shortcomings of more abstract metalanguages, such as circularity and obscurity. In her view, the latter constitutes the main weakness of abstract languages such as those derived from logic. She considers abstract speculation to be useful only as long as it can help to identify plausible candidates for primitives (cf. Wierzbicka 1992b:386).

The theory started out as a method for stating the meanings of lexical items, but it was extended to be used as a tool for grammatical analysis and cross-cultural studies. The universal aspect of the primes, such as the claim that they be universally lexicalized across languages, provides a way of comparing meanings cross-culturally.⁵ Moreover, this is necessary to prevent ethnocentrism in cross-cultural studies.

3.1 A Brief Look at the History of the Approach

As mentioned above, the beginnings of the approach reach back more than thirty six years. This suggests that there must have been quite some developments over the years. The major phases outlined in this section follow Goddard's division into periods of time (cf. 2006a:544).

A first phase extends from 1970 to the middle of the 1980s. Again, inspired by a lecture of Andrzej Boguslawski, Anna Wierzbicka began to develop a hypothesis which was first presented in her 1972 publication *Semantic Primitives*. Back then, fourteen primitives had been established.⁶ These included I, YOU, SOMEONE, SOMETHING, WORLD, THIS, WANT, DON'T WANT, FEEL, THINK OF, IMAGINE, SAY, BECOME, BE APART OF (Wierzbicka 1972 quoted in Goddard 1994:21). The rules of combination were not well specified and at the same time, the explications were extremely long and complex. For example, explications in *Lexicography and Conceptual Analysis*, which was first published in 1985, filled up whole pages.

⁵ However, the application in cross-cultural studies presupposes that one accepts the adequacy of the theory on the lexical level.

⁶ For the list of current primitives cf. 3.4.

A second phase, from the mid 1980s until the late 1990s, was marked by a shift of focus. The research on semantic primitives turned into a search for lexical universals. In the middle of the 1990 cultural scripts⁷ were introduced and investigated for the first time (cf. Goddard 2006c:5). It is due to this shift of focus that extensive research was and continues to be done in a great variety of languages. This does not only include relatively well explored Indo-European languages such as English, Spanish, Italian, Polish, French and German. In fact, languages as diverse as Lao, Malay, Ewe, Mandarin Chinese, Arrente, Cree, and many others are part of the research program.⁸ The extension of the program of research to other languages has led to a revision of the candidates for potential primitives. The number was increased to thirty seven, adding PEOPLE, KNOW, THE SAME, OTHER, ONE, TWO, MANY, ALL, DO, HAPPEN, NO, IF, CAN, LIKE, BECAUSE, VERY, WHEN, WHERE, AFTER, BEFORE, UNDER, ABOVE, HAVE PARTS, KIND OF, GOOD, BAD and SMALL to the inventory (cf. Goddard 1994:22).

A third phase can be identified as starting from the middle of the 1990s. Fifty-five primes had been established by then. It was believed that "many, probably most, of its lexical elements have already been identified" (Goddard 1997:197). Another shift in focus led to the investigation of the grammar of the semantic primitives. Nowadays, the number of primitives has risen to sixty-three. The research now focuses on the comparison of meanings across cultures as well as cultural scripts. Furthermore, possibilities for the application of the NSM in second language learning and intercultural communication are explored (cf. Goddard/Wierzbicka 2007). Although the NSM will be criticized in different ways throughout the paper it has to be emphasized that Wierzbicka's work has inspired extensive research into not so well known languages. This is one of the most positive side-effects a scientific theory can have.

⁷ In NSM theory, cultural scripts are "statements – framed largely or entirely within the non-ethnocentric metalanguage of semantic primes – of some particular attitude, evaluation, or assumption which is hypothesised to be widely known and shared among people of a given speech community" (Goddard 2006c:5).

⁸ For a list of languages which have been studied in the NSM framework cf. Goddard 2002:12.

3.2 General Assumptions in the NSM framework

Before presenting the foundations of the NSM more general assumptions in the framework have to be introduced.

The Syntax-Semantics Distinction

The relationship between different levels of linguistic analysis is a central question of any linguistic theory, especially the relationship between the syntactic level and the semantic level of analysis. Referring back to the historical outline of research in semantics (cf. 2.1), it has been mentioned that within the generativist tradition the study of semantics was of little interest. Wierzbicka summarizes this position as follows: "the conviction that meaning can be more or less ignored in the study of language is clearly linked with a conviction that semantics is an independent field (...)" (1988:1). Therefore, an account of syntax does not have to include meaning. However, Wierzbicka, Goddard and other NSM proponents do not share this opinion at all. On the contrary, they assume that the integral function of language is to convey meaning. Accordingly, the structure and rules of language only serve this function and contribute to it. Therefore, semantics has to be considered, in order to understand how a language works (cf. Wierzbicka 1996:3). Moreover, all aspects of language work together to express the intended meaning. It follows, that grammar is not semantically arbitrary and, in fact, "if semantics is to be defined as a study of meaning encoded in natural language then syntax is simply one part of semantics" (Wierzbicka 1988:1).

Metalinguistic Adequacy

A core assumption, which underlies the NSM, is that any language is in principle sufficient as its own metalanguage (cf. Goddard 2002:5). That means, any language under investigation, or object language, can be used to describe itself. This is the principle of metalinguistic adequacy, which is present throughout the theory. It is derived from the idea that meanings of semantic primitives correspond to word meanings in ordinary and natural language. It surfaces in the notion of expressive power.

3.3 The Conception of Meaning in NSM Theory

The NSM approach is a version of conceptual analysis. In other words, means word meanings correspond to concepts in peoples minds.⁹ Therefore, in order to specify the meaning of a word one has to uncover the concepts which it consists of (cf. Wierzbicka 1996:212). Meaning is seen as subjective and culture-specific in that it is a reflection of important cultural matters and "culture-specific modes of social interaction" (Wierzbicka 1988:2). Moreover, according to Wierzbicka "meanings can be rigorously described and compared if they are recognized for what they are: unique and culture-specific configurations of universal semantic primitives" (1996:257).

The NSM approach, as a so-called semiotic approach, assumes that a "sign cannot be reduced to or analyzed into any combination of things which are not themselves signs, consequently, it is impossible to reduce meanings to any combination of things which are not themselves meanings" (Goddard 1994:1). Thus, 'irreducibility of the sign' implies that meanings can only be analyzed or described using language. In other words, meanings can only be translated. Therefore, the question "What is meaning?" becomes irrelevant because one can never 'break the circle' (cf. Goddard 1998c:3) and describe meanings without creating new ones.

Taking this persuasion as a point of departure, many other views of meaning are immediately excluded from the picture. For example, the approach is incompatible with denotational or referential approaches, which assume that meaning is reference (cf. section 2.2.1). Moreover, Wittgenstein's view of 'meaning as use' is rejected. Although it is not denied that the meaning of a word is related to its use and that the use of language is important to language acquisition as well, it is not considered to be helpful in accounting for phenomena in language (cf. Goddard 1998c:6). Other aspects of the conception of meaning in NSM theory will be considered in subsequent sections of this chapter.

3.3.1 Composite Nature of Meaning

Wierzbicka's view that complex meanings are composed of simpler

⁹ Riemer (2005:67), however, notes that the conceptual nature of the semantic primitives only play a small role in NSM theory because the search for lexical universals has been primarily concerned with definitions without great mention of other works on conceptualization.

meanings is shared by other researchers such as Katz, Fodor and Jackendoff. Even so, as it had been mentioned earlier (cf. 2.2.5), there is no agreement among them as to how these simple meanings are to be discovered and how they go together to form complex meanings. Classical componential analysis, for example, is rejected by Wierzbicka and her colleagues because a "semantic explication of a word should account for the full range of its use. This requires a full description of the concept, not only a list of diacritical features" (Durst 2003a:178). Therefore, in the NSM approach the primary method for stating meanings is reductive paraphrase, which consists of sentence-like expressions in natural language (ibid:162). The vocabulary consists of a finite set of undecomposable meanings, namely, the semantic primitives. What further differentiates NSM primitives from semantic primitives used in other approaches will be explained in section 3.4. Summarizing the NSM point of view, complex words are the product of a combination of simpler semantic concepts which are to be analyzed in sentence-like expressions.

3.3.2 Discreteness of Meaning and Semantic Analysis

This section picks up on the question whether meanings are fuzzy or fixed in nature (cf. section 2.2.4) and how this is handled in NSM theory. Using reductive paraphrase, the underlying assumption certainly is that meanings or concepts can be specified by defining them: "we assume that meanings are discrete and determinate; that is, that every word has a definite number of senses (one, two, or whatever), and that every meaning (except for 'primitive' ones) can be stated in the form of one definition" (Goddard 1994:22). Apart from that, the idea that meanings can be vague is not denied. According to Wierzbicka, words vary in the way they are put to use, which is a result of the vagueness underlying the concept (cf. 1995a:12). At the same time, this vagueness is accompanied by subjectivity, as it is the case with emotional terms.

These two positions are often perceived as being opposed to one another. That is, if meanings do not have a fixed boundary, they cannot be defined. Wierzbicka and Goddard strongly disagree with this dichotomy. Thus, while they assume that many words are vague and subjective, they reject the idea that because of that meanings are not definable (cf. Wierzbicka 1996:148). In fact, they attempt to combine these two positions by incorporating prototypes into the definitions, a tool which is often used to

deal with fuzzy meanings. Therefore, prototypes "can help if they are combined with verbal definitions instead of being treated as an excuse for not ever defining anything" (ibid:160). Here, the treatment emotion terms is a vivid example. They are inherently subjective and have often been claimed to be impossible to define (cf. Wierzbicka 1996:161). However, Wierzbicka defines them by reference to an ideal or prototypical situation, which provokes certain thoughts and desires.

This treatment of fuzziness of meanings is not uncontroversial. Geeraerts, for example, sees this technique as a contradiction to the NSM's original claim because in this way, the definition or explication is only restricted to the prototypical core of the category. Even so, the NSM claims that "a valid definition must be empirically adequate, that is, it must be phrased in such a way that it covers the entire range of use of a given word" (Wierzbicka quoted in Geeraerts 1994:41). This is also expressed by Wierzbicka's "Principle of Discrete and Exhaustive Analysis" which states that meanings can be analyzed and decomposed into discrete meanings "without residue" (Goddard 1994:8).

3.4 Semantic Primitives

As the NSM has been designed to avoid the shortcomings of other approaches they are very careful not to fall prey to circularity and obscurity. Thus, Wierzbicka has proposed a finite set of hypothetical primes, which cannot be decomposed further. The idea is not a new one. Many other theories incorporate it as well and share the positive attitude towards semantic primitives and consider them the building blocks which complex meanings are composed of. Even so, the way in which they fit into their theories is distinct. Thus, one aspect which contrasts the NSM primitives from those used in other approaches is their assumed naturalness, that is, their correspondence to expressions in natural language. This is the reason why the NSM is claimed to be intuitively intelligible to any native speaker (cf. Goddard 2006b:210). Although first identified in English, the semantic primitives are thought to be lexical universals (cf. Goddard 2002:16) which is one of the main attractions of the approach.

3.4.1 Indefinability of Semantic Primitives

The fact that semantic primitives are not definable or decomposable into smaller components is actually entailed in the term "primitive". In NSM theory, it follows from the 'irreducibility of the sign' and the 'Principle of Discrete and Exhaustive Analysis', which states that "meanings can be analyzed in a fully determinate way; that is, any complex meaning can be decomposed into a combination of discrete other meanings, without circularity and without residue" (Goddard 1994:8). If circularity is to be avoided, there has to be a set of indefinable meanings which is put beyond analysis. The necessity of the indefinability of some elements is explained by an argument adopted from Gottfried Leibniz, who is frequently cited by Goddard and Wierzbicka:

If nothing could be comprehended in itself nothing at all could ever be comprehended. Because what can only be comprehended via something else can be comprehended only to the extent to which that other thing can be comprehended, and so on; accordingly, we can say that we have understood something only when we have broken it down into parts which can be understood in themselves. (Leibniz 1903/1961:430 quoted in Wierzbicka 1996:11)

In these terms, understanding presupposes linguistic elements which do not need further explanation. These linguistic elements equal the semantic primitives put forward by the NSM.

The research on semantic primitives in the NSM theory started out with 14 proposed primes. The discovery method was and still remains systematic lexical analysis in many areas of the lexicon mainly by trial and error. The underlying assumption is that it is not possible to prove that an element is indefinable, and thus, a primitive. It can only be shown that an item is not indefinable by providing an adequate definition (cf. Goddard 1998c:59). Since the publication of *Semantic Primitives* (1972) the set has increased to a number of sixty-three which is probably due to the cross-cultural research. A list of the current primitives can be seen in table 1 below:

Substantives:	I, YOU, SOMEONE/PERSON, SOMETHING/THING, PEOPLE, BODY
Relational substantives:	KIND, PART
Determiners:	THIS, THE SAME, OTHER/ELSE
Quantifiers:	ONE, TWO, MUCH/MANY, SOME, ALL
Evaluators:	GOOD, BAD
Descriptors:	BIG, SMALL

Substantives:	I, YOU, SOMEONE/PERSON, SOMETHING/THING, PEOPLE, BODY
Mental/experimental predicates:	THINK, KNOW, WANT, FEEL, SEE, HEAR
Speech:	SAY, WORDS, TRUE
Actions, events, movement, contact:	DO, HAPPEN, MOVE, TOUCH
Location, existence, possession, specification:	BE (SOMEWHERE), THERE IS/EXIST, HAVE, BE (SOMEONE/SOMETHING)
Life and death:	LIVE, DIE
Time:	WHEN/TIME, NOW, BEFORE, AFTER, A LONG TIME, A SHORT TIME, FOR SOME TIME, MOMENT
Space:	WHERE/PLACE, HERE, ABOVE, BELOW, FAR, NEAR, SIDE, INSIDE
Logical concepts:	NOT, MAYBE, CAN, BECAUSE, IF
Augmenter/intensifier:	VERY, MORE
Similarity:	LIKE

Table 1: *NSM Semantic Primitives (cf. Goddard 2006c:4)*

It has been maintained, that the list of primitives is still open to revision. Since the completeness of this list does not only depend on the indefinability of its elements, but on their universality as well, the list is open to modification according to evidence from the ongoing research. Most of the languages of the world are still under investigation (or have not even been investigated at all) and therefore, the primes will have to be continuously attested across languages.

3.4.2 Semantic Primitives as Lexical Universals

It is hypothesized that semantic primitives are at the same time conceptual primitives which represent innate human ideas (cf. Wierzbicka 1995b:154). In other words, they form the conceptual core of all languages: "semantic primitives of the English language' match the semantic primitives of Polish, Japanese, or any other natural language" (ibid:154). This implies a distinction between the conceptual meaning, the lexical universal, and its actual form in the respective language, the exponent. To visualize this distinction the concept is conventionally displayed in capital letters, while the exponent is displayed in italics:

To reflect the special status of such words as exponents of universal human

concepts, I will render them in capital letters, as GOOD and BAD, or BUENO and MALO (Spanish), or BAIK and MURUK (Malay), thus indicating that they are being used as elements of a special semantic metalanguage. At the same time, we can identify them with the meanings or ordinary English, Spanish and Malay words. (Wierzbicka 1999:35)

This practice will also be adopted in this paper as well. It is not assumed, that lexical universals take the same shape across all languages. A concept which appears as a lexeme in one language, might be realized in another language as a phraseme or vice versa. For instance, the semantic primitive A LONG TIME might be expressed in other language by a single lexeme, such as in Yankunytjatjara *rawa*, Malay *lama*, Lao *don* (cf. Goddard 1998c:59). Through lexical analysis of different languages presumed primitives can be confirmed, doubted or even rejected. The more languages can be confirmed to have a certain primitive, the more firmly established is a prime's universality. On a more theoretical level, the search for lexical universals involves the question how linguistic conceptualization and cultural diversity relate to one another. If there is a conceptual core which is lexicalized in all languages how does this affect cultural diversity? The two common positions on this issue, linguistic relativism on the one hand and universalism on the other, have been outlined above (cf. 2.2.5). NSM theory does not see these positions as necessarily in opposition to one another and claims to combine these two tendencies (Goddard 1998b).

Linguistic Relativity in NSM theory

Linguistic relativity is expressed in the belief that the majority of the words have a complex and language specific meaning. Goddard (1998b:145) illustrates that by naming examples from the domain of food. He highlights that Polish has words for cabbage stew, beetroot soup and plum jam, which English does not have. Wierzbicka and Goddard conclude that the "conceptual perspective on life is clearly influenced by his or her native language" (Goddard 1998b:155; Wierzbicka 1997:7). Both of them go back and forth between a stronger view, which says that "conceptual thinking is dependent upon language" (Goddard 2003:396) and a weaker version in which a native language influences conceptual thinking: "the outlook of an individual is never fully determined by the conceptual tools provided by his or her native language, partly because there are alternative ways of expressing oneself" (Wierzbicka 1997: 5).

If linguistic categorization makes use of general cognitive mechanisms, as

assumed by Cognitive Linguistics, then it is conceivable, that we comprehend the world or "dissect nature along the lines" which are given by our cognitive system in general and by experience of what we already know. Still, Wierzbicka only accepts an explanation which involves language:

Whorf's main thesis that 'we dissect nature along the lines laid down by our native languages,' and that 'we cut nature up [in ways] codified in the patterns of our language,' contains profound insight which will be recognized by anybody whose experiential horizon extends significantly beyond the boundaries of his or her native language.¹⁰ (Wierzbicka 1997:7)

Thus, their work intends to discover language specific structures without bias. Cultural key words have been identified, which are thought to be "salient and culture-laden" words (Goddard 1998:145; Wierzbicka 1997). Still, it is not clear whether or not the selection of such salient and culture-laden words promotes stereotypes.

Universalism in NSM theory

The compromise between the two positions 'linguistic relativity' and 'universalism' is thought to be achieved through the semantic primitives. As the primitives are claimed to be universal human concepts, they should have an exact translation in every human language. It is maintained that they enable communication across cultures in the first place, because all humans can draw on the lexicalized conceptual core which provides an universal framework for understanding (cf. Goddard 1998c). At the same time, the discovery of a set of semantic primitives restricts the amount of semantic variation (cf. Goddard 2003) and thus, could be considered a universalist tendency. The link to cultural diversity is then, to use these concepts to paraphrase language specific and culture specific meanings.

3.4.3 Reductive Paraphrase

The NSM approach uses definitions, or to be exact reductive paraphrase, to

¹⁰ At this point, it becomes necessary to point to the strong rhetoric which seems to be peculiar to NSM literature by Goddard and Wierzbicka. In this case, the reader is not left any other choice, then to agree with her, unless he or she reveals him- or herself as narrow-minded, rather provincial person. Elsewhere, polemics seems to be very common in the argumentation. For example, in Goddard's article "Bad Arguments Against Semantic Primitives" (1998a) he accuses other authors of "prejudicial language" while he himself makes use of the very same practice. Nevertheless, discussing this issue further is not the intention of this paper, but it had to be mentioned, since in my view has an effect on the credibility and scientific impression of the work.

explicate the meaning of words. Accordingly, "a definition is a hypothesis about the meaning of a word" (Wierzbicka 1992a:551). Nevertheless, NSM definitions are different from ordinary dictionary definitions. The vocabulary is different, of course, but this is not all. In a way, practical considerations such as the requirements for a definition and the nature of metalinguistic practice rather than purely theoretical considerations seem to be the point of departure for NSM theory (cf. Riemer 2006:351).

The major shortcomings of dictionary definitions, obscurity and circularity, are tackled in different ways. Obscurity is countered by the use of ordinary language and well as the fact that a word meaning must be framed in simpler words than the word which is to be analyzed. Circularity is avoided by restricting the descriptive vocabulary to a closed set. As semantic primitives ought to be self-explanatory there is no need to define them. Thus, they provide the conditions necessary to avoid circularity. Apart from circularity, Goddard states that semi-metaphorical use of words, unusual phrases and scientific definitions are to be avoided in an accurate definition (cf. 1998c:28). Thus, he rejects definitions such as 'come into being' for *become*, 'a settled good-will' for *love* and 'mixture of oxygen, nitrogen and other gases which surrounds the earth and forms its atmosphere' for *air*. In general, a definition has to be accurate, in that it is neither too broad, nor too narrow. It may not contain false or superfluous components. It follows, that a definition should ideally be paraphrased "in the simplest possible terms, thus avoiding circularity and obscurity" and "no 'technical terms', fancy words, logical symbols or abbreviations are allowed" (Goddard 1998c:56). By contrast, the use of lines and indentations is permitted because they are seen as 'iconic conventions'.

NSM explications are set up trying to pay attention to the issues mentioned above. Most importantly, the paraphrases are made up of the semantic primitives, which correspond to expressions in natural language. This is seen as the main advantage, because this supposedly makes meanings concrete and testable because it is accessible to native speakers: "definitions of this kind proposed here are intuitively intelligible and intuitively verifiable" (Wierzbicka 1992a:551). Furthermore, the format of the NSM paraphrases ought to be explicit so that in the explication meaning relations can be established which bring out subtle distinctions among meanings within a language as well as across languages (cf. Durst 2003a:182; Goddard 2003:408).

Definitions are claimed to be exhaustive in two ways: first of all, they

should be capable of explicating the whole of the vocabulary of a language¹¹ (cf. Goddard 2002:16). Secondly, they should account for the range of use of the word being explicated (cf. Wierzbicka 1992a:551). Furthermore, the NSM is seen as a 'mini-language', which should have the same expressive power as a natural language. Being a 'mini-language', apart from the vocabulary, there must be some pattern of combination or syntax. NSM theorists suppose, that certain patterns of combinations can be attested across languages as well (cf. Goddard 1998c:60).

3.4.4 Semantic Molecules

NSM proponents maintain that not all concepts are equally complex from a semantic point of view. For this reason, some meanings can be explicated directly via the primitives while others have to be defined in different stages. These stages are attained using semantic molecules, which are "packet[s] of semantic components that exist as the meaning of a lexical unit" (Goddard 2006a:549). In other words, semantic molecules are themselves non-primitive concepts which are used in the explications in order to deal with semantically complex meanings. This is called intermediate semantic decomposition because the analysis 'stops' at an intermediate level and not at the smallest unit of lexical analysis in NSM, the semantic primitive. A condition for the use of semantic molecules is that the concept itself has been explicated. As an example, the explication in figure 1 contains many semantic molecules, which are marked by an M in square brackets. It is obvious that the use of these non-primitive concepts shortens the explication considerably and contributes to the understanding. Nonetheless, this is not uncontroversial for the testability and will be discussed in chapter six.

cats =>

- a. a kind of animal [M]
- b. they live with people
sometimes they live in places where people live
sometimes they live near places where people live
- c. they are not big
a person can pick up [M] one with two hands [M]
- d. they have soft [M] fur [M]
they have a round [M] head [M]
their ears [M] stick out [M] on both sides of the
top part of the head [M], they are pointed [M]
their eyes [M] are not like people's eyes, they
are shiny [M]
they have some stiff [M] hairs [M] near the
mouth [M], they stick out [M] on both sides
of the mouth [M]
they have a long [M] tail [M]
they have soft [M] feet [M]
they have small sharp [M] claws [M]

Figure 1: *Semantic Molecules in the Explication of cats* (cf. Goddard 2006a:549)

¹¹ This corresponds to the claim of metalinguistic adequacy (cf. 3.2).

4 SELECTED CLAIMS IN THE NSM APPROACH

NSM proponents keep emphasizing their advantages over other approaches. Nicholas Riemer points out two claims for methodological superiority which are associated with the NSM:

- (1) The NSM set of primitives provides the best currently available lexico-grammar for descriptive and comparative semantics.
- (2) The actual definitions developed in NSM are the best currently available definitions in descriptive and comparative semantics. (Riemer 2005:70)

Riemer sees the first claim as inherent to the NSM at large. The second one is indirectly expressed throughout the works of Wierzbicka and Goddard, in quotes such as: "using the NSM approach it has repeatedly proved possible to defy the skeptics and to 'define the indefinable'" (Goddard 2002:7). The definitional success is, thus, central to the theory. Another determining feature is that definitional success, or explanatory effectiveness, becomes testable. Verifying the explication by the test of substitution has been frequently suggested, i.e. the substitution of the explication for the words associated by the speaker. It is the naturalness of the NSM vocabulary which enables or safeguards the testability. Since the NSM primes are based on natural language rather than abstract formalisms it is reasoned that the NSM is, indeed, accessible to native speakers. This can be seen as a third claim of methodological advantage because the NSM's naturalness "enhance[s] the predictiveness and testability of the hypothesis. Most other systems are hampered by the obscurity and artificiality of the terms of description" (Goddard 2006a:544).

To summarize this, the naturalness of the NSM supposedly enables testability of the explanatory effectiveness. Therefore, the claim for naturalness is directly related to the claim for methodological priority. In the present chapter, these two aspects of the NSM approach will be elaborated on. Their relevance within the theory will be explored.

4.1 The 'Naturalness' of the NSM

Naturalness is an important issue in the NSM. Obviously, it is manifested in the very name of the theory as well as in the 'Natural Language Principle'.¹² For one thing, it is worth dwelling on because of that. For another thing, it will be argued, that the naturalness is used as a distinguishing feature, which is indirectly responsible for the NSM's methodological advantage over other approaches.

The conception of the relation between abstract metalanguages and natural metalanguages has been discussed in section 2.3.1. From these remarks, the question arises what justifies calling the NSM a *Natural* Semantic Metalanguage. The answer is given by Wierzbicka herself:

The metalanguage in question is a technical, artificial language, not a natural language; nonetheless, it is appropriate and illuminating, I think, to call it a 'natural semantic metalanguage', because it is derived entirely from natural language and because it can be understood via natural language without any arbitrary signs and conventions. (Wierzbicka 2003:7)

Hence, naturalness in the NSM refers to a lower degree of abstractness, owing to the fact that the putative conceptual primitives are lexicalized in ordinary or natural language. Therefore, the paraphrases contain ordinary language expressions. As it has been mentioned earlier, arbitrary signs and abstract formulas are not allowed in the explications because they are not self-explanatory and therefore, not intuitively understandable (cf. Wierzbicka 2003:7). The same applies to binary features and logic symbols (cf. Durst 2003a). As iconic conventions are the only means allowed: "there are two basic devices for the spatial design of a text: lines and indentations" (ibid:174). This issue will be discussed further in section 6.2.2.

Another reason to attribute naturalness to the NSM is pointed out by Goddard: "the semantic primitives and their principles of combination would constitute a kind of mini-language with the same expressive power as a full natural language, hence the term 'natural semantic metalanguage'" (Goddard 2002:5). This is a strong claim which has far reaching implications. For example, it imposes very high expectations on the outcomes of a semantic test, such as in chapter five.

¹² The 'Natural Language Principle' states that "Semantic Primitives exist and their elementary syntax exist as a minimal subset of ordinary language" (Goddard 1994:10).

However, equally important as to establish NSM's position and its status among "rival" approaches, is to realize why the naturalness is crucial to the NSM approach. Wierzbicka and Goddard, argue that the use of ordinary language in the explications prevents obscurity (*ibid.*) and thus, makes the explications understandable. This means, following their argumentation, that the explications can be "directly or indirectly substituted in place of the expressions they are intended to represent, and so can be submitted to the test of substitution *salvo sensu*" (Goddard 2002:6). Since abstract metalanguages cannot be verified in the same way, this would constitute an advantage and would contribute to the scientific character of the NSM. As mentioned in the introduction, the notion of the native speaker is not restricted but in fact includes any 'non-specialist' native speaker. The primitives can only be justified if the explications correctly display people's concepts, that is, if they display "the cognitive reality of ordinary language users" (Goddard 2006a:544). Yet, if only a specialist would be able to access, understand, and interpret the explications the methodological advantage would be lost. Therefore, it must be concluded that, apart from the primitives the naturalness resides within the accessibility and intelligibility of the definitions through which the explanatory effectiveness of the definitions can be tested.

The way in which explications are set up is intended to comprise certain components of a concept. After all, it is an analysis of meaning, and certain "meaning components" have to be integrated into the paraphrase. For example, the explication for the emotional term *sad* looks like this:

- (1) X feels something
- (2) sometimes a person thinks like this:
- (3) I know something bad happened
- (4) I don't want things like this to happen
- (5) I can't think now: I will do something because of this
- (6) I know I can't do anything
- (7) because of this, this person feels something bad
- (8) X feels something like this

(Wierzbicka 1999:39)

In this example, components of meaning which have been identified by Wierzbicka are the awareness 'that something bad happened' and an evaluative component BAD. Furthermore, it suggests a "resigned state of mind" (Goddard 2006a:548). All of the primitives, which make up the explication, are simple. Nevertheless, it will be interesting to see, if the extensive restriction of the vocabulary to a "basic English"

(Wierzbicka 2003:7) and the complexity of the structure have an effect on the understandability.

Naturalness, in terms of accessibility and testability of the explanatory effectiveness, is crucial and a cornerstone of the NSM approach. Therefore, one would expect that the explications would actually be put to the test, but as Lisa Matthewson remarks, "one does not often see NSM explications being tested, in the sense of being subjected to anything other than the introspective judgments of the researcher" (2003:217). Therefore, this question will be pursued in chapter 5.

4.2 Explanatory Effectiveness

It has to be highlighted, that intelligibility and explanatory effectiveness are not exactly the same. Rather, the claim for intelligibility is supposed to make the explanatory effectiveness testable. The explanatory effectiveness is determined by the accuracy of the explication (cf. 3.4.3), in other words, only if an explication is neither too broad nor too narrow it will have sufficient predictive power (cf. Goddard 1998c:31). Another very important claim is that fine-grained differences among word meanings "can be rigorously and revealingly portrayed" (Wierzbicka 1992a:539). As Uwe Durst summarizes: "due to the explicit character of NSM explications one can establish meaning relations which capture even the subtlest distinctions" (2003a:182). In this respect, the question arises whether these subtle distinctions would be recognized in the explication by native speakers in an actual test of substitutability, or whether this is merely a tool for the specialist. The latter would be problematic, because then the "cognitive reality" of the explications as a whole would be challenged. To sum this up, explanatory effectiveness has to be seen in terms of the accuracy of the explications, on the one hand, and in terms of the fine-grained differences or subtle distinctions, on the other hand. The difference between these two aspects of the explanatory effectiveness has to be kept in mind. While the accuracy is concerned with an *individual* explication, subtle distinctions are concerned with semantic nuances which differentiate one word from another.

The existence of the universal semantic primitives can only be justified if

the definitions are successful. The need for explanatory effectiveness, thus, arises from the claim for cognitive reality of the primitives and the explications. It follows that "a set of universal semantic simples would be useless if it could not successfully explicate semantically complex meanings" (Riemer 2005:72). The claim is that the set of primitives has the same expressive power as a full natural language (cf. Goddard 2002). Therefore, an explication and the respective word meaning must be substitutable for one another without any addition or loss of meaning. If the analysis is complete the conceptualization of the explications by native speakers of the respective language should coincide with the concept analyzed. Accordingly, Goddard himself suggests, "that the ultimate test of a good explication is that native speakers agree that the explication and the original expression say exactly the same" (1998c:57). This agreement, of course, would be based on an individual's intuition, just as any explication is derived from the analyst's intuition in the first place. Therefore, drawing generalizations about the effectiveness of a definition is an empirical matter (cf. Durst 2003a:166). Nonetheless, if a test of the understandability of the definition should indicate, for example, that the definitions are not successful, explications as such are not to be rejected automatically. Different explanations could account for such an outcome. These will be discussed again in section 6.3.1.

There are several ways to account for negative evidence in a test for substitutability. Naturally, setting up explications requires careful analysis, which is based on the intuition of the specialist, namely introspection. Until a satisfactory version can be found, the explication will sure enough pass through many stages. Many definitions are thus not considered to be finished yet. Nevertheless, they are "perfectable" (Wierzbicka 1992a:550). However, as explanatory efficiency seems so crucial to the approach and

if NSM is to be open to genuine empirical testing, its explications of meaning cannot always be taken as provisional. The point must come where the paraphrases NSM offers are no longer promissory notes, but definitive analyses which can be submitted to decisive testing. (Riemer 2006:351)

In the following chapter, an attempt to test the explanatory effectiveness will be presented and its implications will be discussed in chapter six.

5 TESTING EXPLANATORY EFFECTIVENESS

The motivation for the test of the explanatory effectiveness, and its importance, has been stressed at several points throughout the paper. The test consists of twelve explications, of which all except for one are taken from the domain of emotion terms. In order to present and discuss the results in the following sections, a few remarks on the study of emotion terms in the NSM as well as the structure of the explications will be necessary. After a brief introduction of the study of emotion terms in the NSM framework, the hypotheses, the methodology and the results of the test will be presented and subsequently discussed.

5.1 The Study of Emotion Terms in the NSM framework

The study of emotion terms in the NSM framework is based on the distinction between feelings and emotions. Wierzbicka argues that emotions cannot be reduced to feelings and insists on this distinction. Therefore, it has to be kept in mind, that they are not used interchangeably. According to Wierzbicka, emotions are composed of feelings as well as thoughts and bodily reactions (cf. 1999; 1992a). It follows, that corresponding emotion terms are culture specific, because the thoughts that might be involved are culture specific. Furthermore, she argues that the concept FEEL is more basic or simpler than the concept EMOTION. In fact, FEEL has been identified as one of the semantic primitives (cf. table 1). Thus, it belongs to the group of lexical universals which makes it possible to express culture-specific emotional concepts with the NSM. It has to be noted, that the claim is not that feelings are universal. Emotions are taken to be composed of feelings and thoughts.¹³ Therefore, they can be explicated using the primitives DO, HAPPEN, GOOD, BAD, WANT, DON'T WANT, I, SOMEONE which are seen to be the most prominent parameters used in the explications (cf. Goddard 1998b:145).

These assumptions are reflected in the structure of the explications of emotion terms. The wording of the explication usually begins with 'X felt'. Using 'X felt'

¹³ Bodily reactions are also seen as part of emotions, but they do not play a role in the explication of emotional terms.

to set the frame for the definition also serves another purpose. The practice of NSM to incorporate prototypical scenarios in the definitions is also applied to explications of emotion terms. These prototypes, or prototypical situations, are also represented by the use of 'X felt something' rather than using 'X was'. In this way, in using 'X felt something' in a definition containing "a thought is only evoked as a part of prototype" (Wierzbicka 1992a:553), while 'X was' seems to attribute a concrete thought to the experiencer: "It is one thing to feel something BECAUSE of a particular thought, and another, to feel LIKE a person would, who would be thinking that particular thought" (ibid:548). However, Wierzbicka does not claim that the experiencer actually has the thoughts as described in the prototypical situation or, as it is also called, cognitive scenario (cf. Goddard 1998). The explication of *happy* will serve as an illustration for the following explanations:

- (a) X felt happy
- (b) X felt something (because X thought something)
- (c) sometimes a person thinks:
- (d) "some good things happened to me
- (e) I wanted things like this to happen
- (f) I don't want anything else now"
- (g) when this person thinks like this this person feels something good
- (h) X felt something like this

(Wierzbicka 1999:53)

An explication of an emotion term usually has three parts. The first part describes the mental state of a hypothetical person. It is expressed in (c) by the phrase 'sometimes a person thinks like this'. Lines (d) to (f) describe the feeling itself and in connection with some kind of evaluation as GOOD or BAD. This part is also the one in which most of the differences, which distinguish one emotion term from the next, are to be found. In the third part, that is, line (g) to (h), a relationship is established between the feeling of the "real experiencer" and the person in the cognitive scenario. This is expressed by the statement 'X feels like this' (cf. Goddard 1998c:95).

The NSM approach groups emotions into six classes. These are (1) 'something good happened', (2) 'something bad happened', (3) 'Something bad can/will happen', (4) 'I don't want things like this to happen', (5) 'thinking about other people' and (6) 'thinking about ourselves' (cf. Wierzbicka 1999:49). Each of the classes incorporate different aspects of hypothesized cognitive scenarios. By grouping emotional terms in this way Wierzbicka intends to accommodate similarities among emotional concepts

and, at the same time, bring out subtle differences between them. Thus, it is easier to compare them. Wierzbicka asserts that emotional terms, such as *happy* and *content*, overlap in their range of use and that the definitions will overlap as well (cf. Wierzbicka 1992a:551). The point is that explications should account for differences just as much as for the similarities.

5.2 Hypothesis

The crucial issue is how native speakers really deal with NSM explications. In NSM theory, the chain of reasoning is as follows: because semantic primitives correspond to everyday concepts and word meanings, explications, which consist of these primitives, can be easily comprehended by native speakers of the language in which the explication is framed. For the present test, several questions arise. Generally speaking, is it acceptable to infer that the explications are as easy to understand as its constituents, i.e. are they equally intelligible? Even if one accepts semantic primitives to be simple concepts which can be understood in themselves, I assume that the explications are not equally intelligible. The term intelligibility, however, has to be specified. Intelligibility is indicated by the participant's responses. Hence, the kind of answers that the participants give will allow insights about the accuracy and potential of the NSM explications to distinguish semantic nuances. In other words, the closer a respondent's answer is to the intended meaning of an explication the more accurate is the explication.

From this rather general hypothesis two associated hypotheses can be derived. First of all, how accurately can a specific concept be captured by an explication? The assumption is that the explications cannot accurately reflect the participant's conceptualization of the respective word meanings. It is an important claim of NSM that it: "allows us to capture subtle and elusive aspects of meaning far beyond the level of detail and sophistication which was aimed at, let alone attained, in earlier analyses of emotion concepts" (Wierzbicka 1992a:549). Accordingly, the second question is whether or not the subtle distinctions can be brought out in a way so that they are recognized by the non-specialist native speakers. This is an important issue,

because only then can the NSM maintain its claim for definitional success, naturalness and eventually, methodological advantage over other metalanguages. It is important to mention that even if subtle distinctions would not be recognized by native speakers, the NSM remains a useful tool for specialists, but I expect that it will not be possible for the participants to differentiate these subtle distinctions.

Moreover, it will be interesting to see if the variety of English of the native speaker will have any influence on the accuracy of the answers given. Will the conceptualization of the word meanings differ with respect to the variety of English?

In brief, the underlying hypotheses of the experiment are:

- intelligibility of the semantic primes does not automatically lead to intelligible definitions
- the explications do not accurately capture peoples conceptualizations
- subtle distinctions between closely related words cannot be recognized by the participants

5.3 Methodology

5.3.1 Instruments: The Questionnaire

The instrument for the semantic test is a questionnaire. The main reason for choosing this instrument was that a questionnaire can accommodate a standardized 'question' and 'answer' set up. Moreover, a questionnaire can be easily spread through the Internet using a web document. This has several advantages. For one thing, the questionnaire can be sent to a many people at the same time. This can be done with a word document as well, but it would have to be downloaded, filled in, saved and then it would have to be send back. In doing that, there could be problems with the formatting of the document, because computers are not all equally equipped. A web document solves these problems. Participants can access the questionnaire online via an URL. After going through the explications, and filling in their answers they simply press the 'submit button'. The procedure is considered easier and, thus, is expected to increase the return rate. A web document also guarantees anonymity to the participant because it does not have to be emailed back. This could be influential to the return rate as well.

The questionnaire is structured into five parts. It consists of a brief introductory remark, the request of background information, a formulation of the task with an example and the actual test.¹⁴ The introductory remark is intended to prepare the participant for the task ahead and at the same time, ask him or her to provide background information which is necessary for data analysis. This is followed by the formulation of the task. Sentences were kept short and the instructions were formulated as clearly as possible. As the questionnaire asks people to associate a specific explication with a meaning, participants could easily feel pressured to provide correct answers. Although, there is a 'target word' that the respective explication stands for, the test is about the semantic intuitions of the participants. Because the answer of the participant is thought of as his or her conceptualization of the explication there is no right or wrong answer as such. In order to take the pressure off of the participant the remark in the formulation of the task, that "there is no such thing as a right or wrong answer" is important for the motivation of the participant. In order to avoid misunderstandings, which could interfere with the correct exercise of the task a native speaker of English was consulted correct the formulation. In addition to that, the formulation was discussed with participants after the test and alterations were made. Moreover, an example of an explication was introduced to familiarize the participant with the task.

The final part of the questionnaire, the actual test of the explications, has been carefully constructed. The choice of explications was an important part of the process of the construction of the questionnaire. First of all, the number of explications had to be determined. If it takes too long to fill in the questionnaire, a participant may just stop at some point if he or she does not feel like it. Therefore, it was decided that twelve explications would have to be sufficient. Another consideration was about the domain from which the explications should be taken. As lexical analysis in the NSM framework covers a wide range of lexical fields, there was a great choice. Even so, the decisive criterion was how well explications in a particular domain are developed. The assumption was, that the more work had been done on a particular domain the more refined an explication can be expected to be. Much work has been done on emotional terms. Wierzbicka has been investigating emotional terms since her very first

¹⁴ Cf. Appendix A.

publication *Semantic Primitives* in 1972. Moreover, some kinds of concepts are semantically simpler than others. For example, emotions, values, speech acts, and interpersonal relations are considered to be simpler than natural kinds, artifacts, and plants (cf. Goddard 2006a:545). Therefore, semantic molecules (cf. 3.4.4) have to be used to explicate concepts of these domains. Yet, the use of explications for the test, which contain semantic molecules would blur the result. It has to be kept in mind, that semantic molecules represent concepts which are thought of as having been successfully explicated. Semantic molecules would directly point to the word meaning which the explication is thought to represent, but without actually testing whether the semantic molecule would be recognized. Hence, the validity of the results would decrease. For this reason, explications which do not make use of semantic molecules, such as emotional terms, were chosen. The actual explications, then, were taken from the 1999 edition of Wierzbicka's *Emotions Across Language and Cultures: Diversity and Universals*. A third consideration concerned the question which emotion terms to choose. Most of the explications of emotion terms are rather long, taking up seven to eleven lines. To make it easier for the participant to get started, the very first explication should be a shorter one. Therefore, the first explication is the only one which was not taken from the domain of emotion terms. At the same time, it was thought to be a particularly easy explication, in order not to scare off participants. All other explications are emotional terms. The order of the explications was randomly arranged, that is, drawn by lot.

1	<i>to lie</i>	5	<i>hope</i>	9	<i>frustration</i>
2	<i>sad</i>	6	<i>joy</i>	10	<i>unhappy</i>
3	<i>happy</i>	7	<i>fear</i>	11	<i>contented</i>
4	<i>pleased</i>	8	<i>despair</i>	12	<i>disappointed</i>

Table 2: *Explications to be Tested*

Finally, the questionnaire is also supposed to test, whether or not subtle distinctions can be recognized by the participants. Because of that, pairs of closely related words were selected, such as *sad* and *unhappy*, *pleased* and *contented*, *happy* and *joy*, as well as *disappointed*, *frustration* and *despair*. These have also been identified by Wierzbicka as closely related. *Hope* and *fear* stand alone. Nevertheless, they are seen as parallel in that there is a "lack of knowledge about the future" (Wierzbicka 1999:59).

When setting up a questionnaire it is important to test it before it is sent out. The test should give a first indication of the actual time needed to fill in the questionnaire. It may also give an impression of how difficult it will be for the participants to go through the test. Additionally, one can also see if the wording of the task is understood correctly. As mentioned before, these questions were also discussed with the first two participants.

5.3.2 Sampling

The sample consists of native speakers of English. Although the NSM and its primitives are supposed to be universal and thus universally translatable, this does not mean that more complex concepts are the same across languages. On the contrary, while primitives are required to be universal, it is strongly emphasized by Wierzbicka, that the majority of a language's concepts is culture-specific. However, as the explications which were chosen for the test are not distinguished by the variety of English participants should, therefore, be able to comprehend the explications irrespective of whether they were grown up in the U.S., Australia, Canada or in the UK as long as they are native speakers of English. For this reason, the target group is not specified with regards to the variety of English. Potentially all native speakers of English can participate in the semantic test.

The sample size was expected to lie in between 20 and 25 participants. This was thought to be the minimum number of participants to obtain meaningful results, which can be interpreted accordingly.

5.3.3 Realization

After the construction of the questionnaire, it was tested. Apart from the formulation of the task, the explications themselves were of interest. There were initially two versions of the questionnaire. One of them was thought to be easier than the other. The questionnaire, which was considered to be more difficult was the one

which was intended for the actual test; but because there were doubts about the level of difficulty of the test and thus, about its practicability, another, supposedly simpler version, was set up. It contained explications which were considered not to be as complex. The first two participants were given two different versions.¹⁵ At this stage, the questionnaires were filled out by hand, and the participants were asked to give feedback about the questionnaire, especially about its level of difficulty, the phrasing of the instructions and whether they found any of the explications especially hard. Both participants could finish the questionnaire within fifteen minutes time. Neither of them mentioned any major difficulties. Although the explications were conceived as rather odd, both maintained that one gets used to the type of wording.

Subsequently, after alterations to the questionnaire had been made, the document was sent via email to a person, who was staying in the US at the time. He distributed the questionnaires and collected them. These questionnaires were also filled in by hand. As problems with formatting arose, when the questionnaire was sent via email it was converted into a web document. From then on, the distribution took place via email. In general, the Internet played an important role in the realization of the test. Since the location of the study was based in Germany, email and Internet provided a fast and convenient way to reach native speakers of English. Persons, who had been abroad in an English speaking county, were asked to forward the URL. Thus, it was sent via email to potential participants. The data, which was filled in into each questionnaire online, was read out using an Internet service "Webmaster's Eye". For each questionnaire which was submitted, the service sent an email to the favored email address. From there, it could be transferred into the spread sheet, which was used for data analysis.¹⁶ The number of people who have been reached in this way can only be estimated. The guess is that about one hundred to one hundred thirty people should have received the URL via email. The return rate of questionnaires is often rather low and in this case again, of those who received the questionnaire thirty-eight responded.

5.3.4 The Procedure of Data Analysis

Different hypotheses have been put forth with regard to testing the

¹⁵ Cf. Appendix A 4 and A 5.

¹⁶ Cf. Appendix B.

explications. Resulting from these hypotheses, there are specific goals in the analysis of the data and also different ways of proceeding. It has to be mentioned that there was no model after which the test could be performed. Therefore, parameters and a method of data analysis had to be developed.

Answer schemes

For an overall characterization of the responses given by the participant, certain parameters were established. These parameters allow to compare answer schemes of different explications. The following parameters will be explained in turn:

- absolute score
- relative score
- spread
- peaks
- omitted answers

The first parameter, 'absolute score', names the total number of hits. This allows for a rough estimation of the accuracy of the answers and the resulting accuracy of the explications. However, it ignores, that some of the answers might be 'closer' to the target word than others. It simply gives a 'black and white' picture. For instance, some of the responses for *fear* are *afraid*, *dread*, *opportunity* and *out of control*. *Afraid* would be clearly closer related to *fear* than *opportunity*. Thus, the evaluation should accommodate this fact. For this reason, a category 'relative score' is introduced. For each explication, a ranking of the responses is set up. Values from one to ten are allocated. The smaller the number, the closer a response is to the target word. To illustrate that with an example, one should consider hypothetical answers for the explication of *excitement*: *anxiety*, *nervousness*, *irritation*, *fascination* and *excited*. Subsequently, the ranking could be as follows: *excited* [1], *nervousness* [3], *fascination* [4], *irritation* [4] and *anxiety* [5]. It has to be mentioned that the responses will be treated as lexemes. Therefore, *excited* and *excitement* are the same lexeme. They would be counted as two occurrences of the same lexeme instead of one occurrence for two lexemes each. It follows that two or more lexemes, could be equally close to the target word without being related to one another. The method, as just described has an important shortcoming. It is obvious, that the assignment of the values and the list, which results from it, are based on subjective judgments. To limit the effects that this might have on the results native speakers have been asked to rank the lists. A list is

created for each explication which consists of the average ranking by different persons. With this method extreme deviation among the subjective judgments can be relativized and balanced. Therefore, the values will provide more reliable results when used in the evaluation. The third parameter, 'spread', indicates how many lexemes per explication have been given as response. I assume, that the greater the spread, the more ambiguous or less accurate the definition. Nevertheless, this only provides a limited picture, because it includes occurrences which could be 'wild guesses' or mere coincidence. In a way, the fourth parameter, 'peaks', is intended to solve this problem. 'Peaks' refers to only those lexemes which occur more than once. In doing so, potential outliers or coincidental answers are excluded. A lexeme that has been named more than once can be assumed to be more stable. Accordingly, many peaks would signify that the ambiguities in the explications are more stable as well. The actual number of occurrences for the respective peak give it more weight. Apart from that, few peaks which have a large number of occurrence each would point to a rather stable explication. The fifth parameter, 'omitted answers', does not play a role in the evaluation as such. It is introduced anyways because it may give information about the motivation of the participants. That is to say, if the number of omitted answers is higher in those explications which are positioned at the end of the questionnaire, it can be considered likely that a lack of motivation might be responsible for that.

Interpretation of the Accuracy of the Explications

For the interpretation of the accuracy of the explications by means of analyzing the quality of the participant's responses the relative score will be most important. All of the responses will be ranked on a scale of one to ten. The average of this score for each explication will refine the picture drawn by the absolute score. The ranking of the answers for each explication and the corresponding occurrences will be displayed in a frequency distribution. For this purpose, the ranked values will be grouped. As several speakers were doing the ranking, some of the values are not integral numbers. As a consequence, the ranking and the mean for every explication contain broken numbers. The distribution of the values will be grouped. The first interval will contain the occurrences ranked between 1-3.9. The second interval will contain the occurrences of the values 4-6.9 and the third interval those ranked 7-10.¹⁷ Most of the

¹⁷ Cf. Appendix D2.

explications are emotion terms. As mentioned above, they are always accompanied by an evaluative statement, i.e. 'this is good' or 'this is bad'. Therefore, participants will at least understand the connotation of a word. Rather vague answers, such as *positive* or *negative*, can be expected. Such words are likely to be ranked rather high. This will be reflected in the relative score. The results of this kind of analysis are best displayed in graphs. It will be interesting to see, to which extent the characterizations of the answer schemes are confirmed or modified. This will allow for a more precise evaluation of the accuracy of the explications.

Interpretation of the Identification of Subtle Distinctions

In order to interpret whether or not subtle distinctions among explications have been recognized by the participants, the absolute score will be central. This is justified by Wierzbicka's claim that even "apparent synonyms such as *sad* and *unhappy*" can be precisely distinguished from another (cf. 1992a:578). Therefore, if the goal is to distinguish precisely those closely related concepts, their 'closeness' cannot be taken into account. Only absolute hits in this respect would count and can give information about the ability of the participants to really distinguish between the meanings of those concepts expressed in the explications.

Regional Variation

Finally, there will be a short digression in order to determine whether the variety of English the participant speaks, has an influence on the accuracy and thus, the results. This will be done in two ways as well: both the absolute score and the relative score shall be considered separately. It has to be kept in mind, that if at all, this will only reveal rough tendencies. In order to really make a substantiated statement the sample size would have to be bigger. At the same time, the allocation of the speaker to the respective variety would have to be more balanced. In the analysis the average absolute score per variety will be calculated. The same will be done for the relative score.

5.4 Results

5.4.1 Participants

The target group of the test consisted of native speakers of English. Thirty-eight questionnaires were filled out altogether. Of these, eight were filled out by hand. The others were completed online and read out by the Internet service "Web-master's Eye". 53.6% of the participants come from the United States of America with 20 participants altogether (cf. figure 2). One of the 20 Americans does not have English as his mother tongue. Given the fact that he has lived in the US for fifty-four years

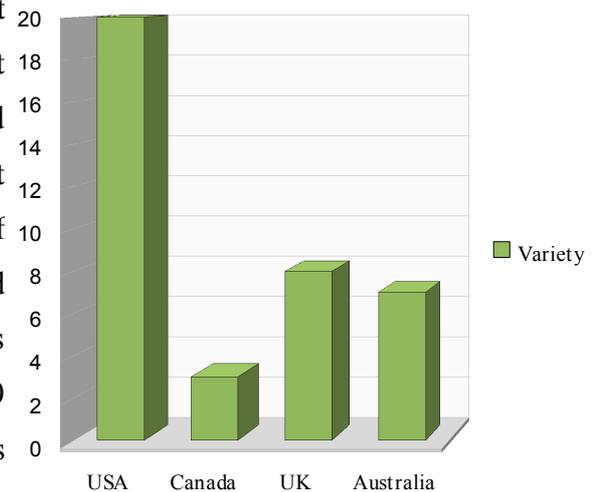


Figure 2: Participant's Variety of English

and because his results do not depart from the others in quality they are not looked at separately but are treated as native speaker results. Furthermore, the questionnaire was filled in by Australians, Canadians and native speakers from the United Kingdom. While Australian and British native speakers more or less balance each other with 7 (18.4 %) to 8 (21 %) participants, only 3 Canadians filled in the questionnaire (7.9 %).

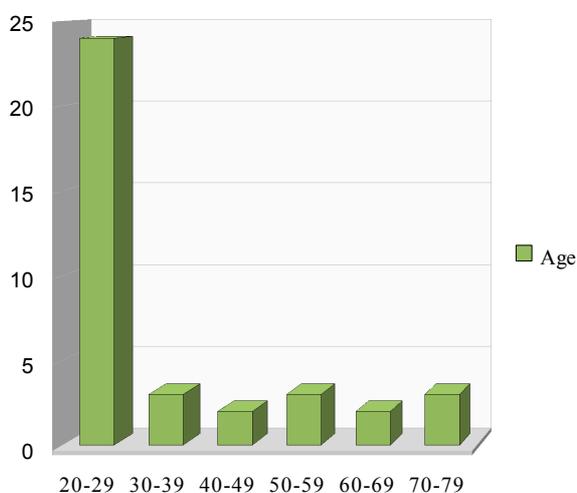


Figure 3: Participant's Age

79 years of age. No age group was favored from the outset. However, this particular

The majority of the participants (cf. figure 3) is in their 20s, that is to say, 63.2 % is between 20 and 29 years old. All following age groups are more evenly spread, with 7.9% of the participants aged 30 to 39, 5.3% of the participants between 40 and 49 years, 7.9% of the participants between 50 and 59 years, 5.3% of the participants between 60 and 69 years and, finally, 7.9% of the participants between 70 and

distribution can be explained by the method used to spread the questionnaire. First of all, it was primarily distributed via email, that is, in 79 % of the cases. Therefore, it is more difficult to reach senior citizens. Secondly, the distribution of the questionnaire was mainly realized through persons who have lived abroad and/or have friends abroad. Many of these exchanges took place in a university context, in which the students usually are of the age group which turned out to be dominant. As these persons had a pivotal function in the distribution of the questionnaire, their age was likely to have an influence on the age of the participants, because only persons of a specific age group can be reached using this kind of method.

The same is true for the educational level (cf. figure 4). The majority of participants, about 81.6%, either have a Bachelor's degree, a Master's degree or a PhD.

Of those which indicated 'high school' or 'A-levels' as their highest educational degree 5 out of 6 are within the age group 20 to 29. As it was asked for the highest educational degree these participants might take up university education later on. In fact, 4 out of 6 have attended university or college at the time the questionnaire was dispensed. Nevertheless, it has to be considered, that systems of higher education differ among these four countries. For example, in the

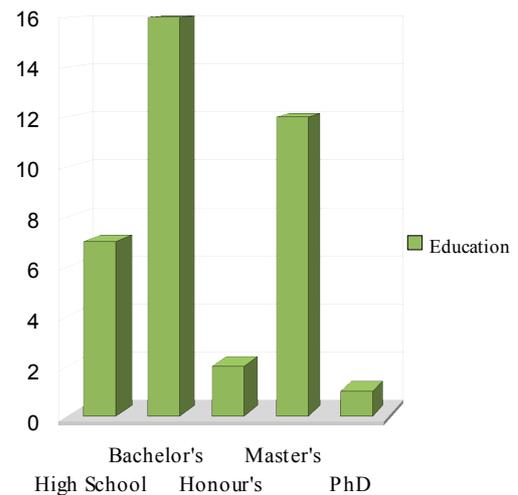


Figure 4: Participant's Education

Australian system an Honors degree can be earned after the Bachelor degree by completing another year at university, doing research and writing a thesis. As the Honor's degree is an extension of the Bachelor's degree, both were grouped together. All in all, most of the participants have had some kind of higher education, which is the most important conclusion one should draw from the background information. It is not expected that there will be a significant difference in the answer schemes among participants with a Bachelor's or Master's degree. In order to make predictions about this, a larger sample would be needed. Finally, the distribution of the participant's sex was as follows: 39.5% male and 60.5% female participants took part in the experiment.

5.4.2 Findings

5.4.2.1 Answer schemes

In a first rough characterization of the results three types of answer schemes can be identified.¹⁸ One pattern that crystallized had a low absolute score as well as a low relative score. Explications, which show these two features, also tend to have a high spread. 'Peaks' is comparatively high, too. This is true for the answers of the

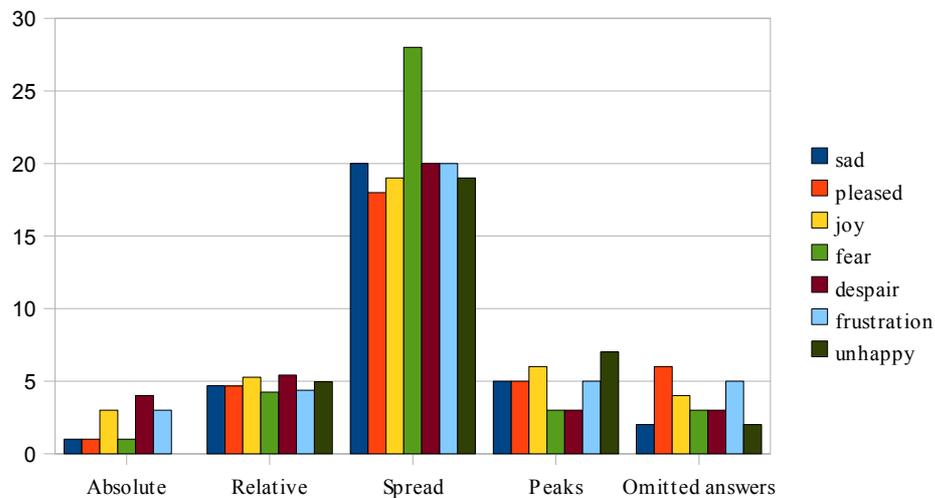


Figure 5: Pattern One: *sad, please, joy, fear, despair, frustration and unhappy*

explications of *sad, pleased, joy, fear, despair, frustration* and *unhappy*. For example, *sad* has only been named once. At the same time, its spread is very high: 20 different concepts have been associated with the explication. 5 of these answers have been named by more than one person. The explication for *fear* seems to be even more ambiguous. While *fear* was named once, there were 28 concepts associated with its explication. It is surprising that only 3 of these 28 concepts were named more than twice, i.e. that peaks was rather low. The overall pattern can be seen in figure 5.

A second pattern results from those responses which have a high absolute score and at the same time (cf. figure 6), a high relative score. These explications seem to be straightforward because they tend to have a very low

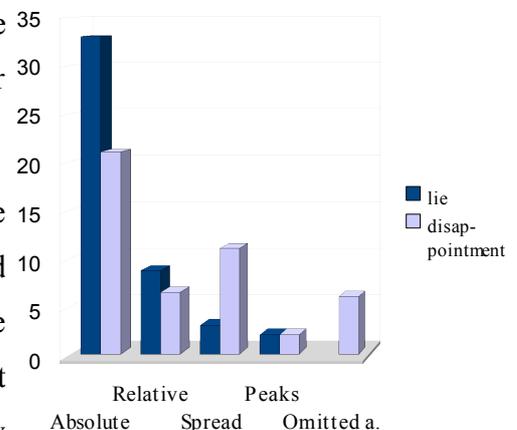


Figure 6: Pattern Two: *disappointment, lie*

¹⁸ For a table with the parameters and a graph containing all the answer schemes, cf. Appendix C.

spread and only 2 peaks in each case. This pattern applies to the explication of *disappointment* and *lie*. While *disappointment* was recognized 55.3% of the time (21 of 38 hits), *lie* was named even in 86.8% of the cases (33 of 38 hits). This confirms the assumption that *lie* would be easier to understand than other explications. This was the reason why it was chosen as the first explication, that is, to facilitate for the participant to get started. In both cases, only two concepts were named more than once, that is, the target word and one other concept, respectively.

A third pattern arises from explications which have a moderately high absolute score and a moderately high relative score (cf. figures 7). At the same time, the responses are high in spread and peaks, as well. This is true for *happy*, *content* and *hope*. Particularly interesting here is *happy* with 23.7% correct associations. However, *content* and *satisfied* were given as responses to the same explication in 52.6% of the cases (10 responses each). The explications of *content* and *hope* even have a higher absolute score (36.8% for *content* and 31.6% *hope*) than *happy*. Then again, they have a high spread and many peaks, which is surprising.

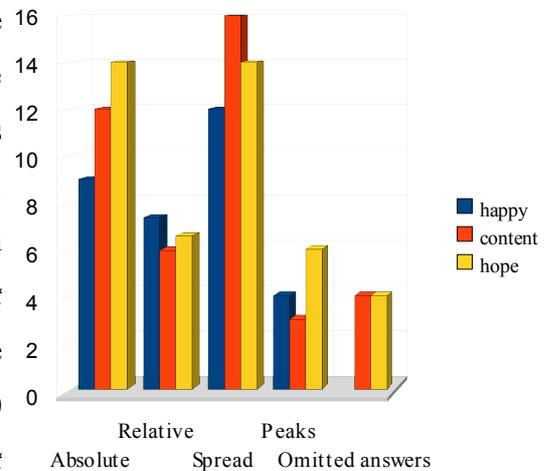


Figure 7: Pattern Three: *happy*, *content*, *hope*

5.4.2.2 Accuracy of the Explications

Again, accuracy of an explication expresses the distance between the given answer and the target word. For this purpose, the relative score is essential. The distribution of the relative score for all explications can be seen in Appendix D1. As it was described in section 5.3.4, the lowest relative score sets in at 4.25, which is rather high (on a scale of one to ten). This can be traced back to the fact, that because the connotation is mostly associated correctly a certain 'closeness' is always there in advance.

The explications of *lie*, *happy*, *hope*, *content* and *disappointed* all have a rather high relative score. The explication of *happy*, for example, 84.2% of all responses

were distributed within the interval first interval of the scale.¹⁹ Thus, most of the responses are very close to the target word, which makes it the most accurate of all the emotion terms tested. *Content* and *disappointment* are equally high on the scale with 55.26% and 57.9% respectively. For *hope* 63.2 % of the answers were rated in the first interval of the scale. The explications of the concepts *sad*, *unhappy*, *fear*, *frustration*

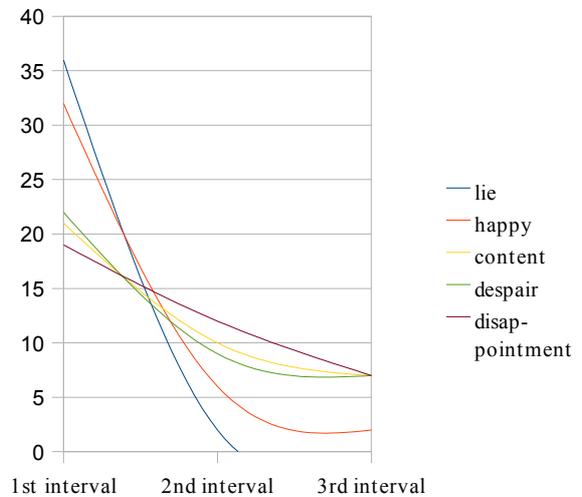


Figure 8: Relative Score for lie, happy, content and disappointment

and *pleased* all have a fairly low relative score. For instance, 73.7% of the responses for *sad* were ranked in the second interval of the scale. For *fear*, 52.6% of the responses were rated in the second interval and 26.3% in the last interval. *Unhappy* reaches 47.4%

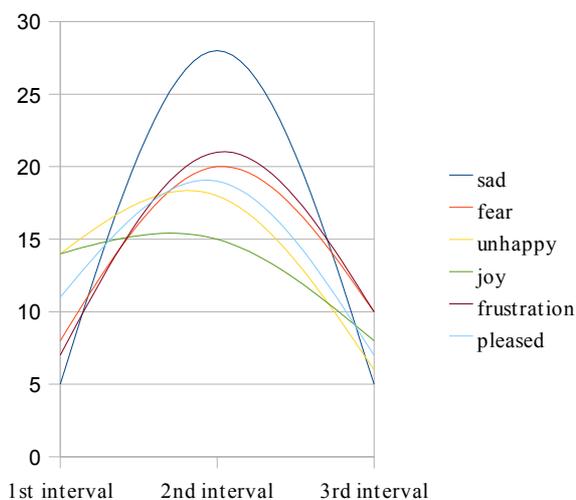


Figure 9: Relative Score for sad, fear, unhappy, joy, frustration and pleased

in the second interval. Somewhat of an intermediate stance have the explications of *joy* and *despair*. Although *despair* is displayed in figure 8, it is not as clear as the other explications from that group. It had many occurrences in the first interval, but at the same time many in the second and third interval of the scale as well (31.6% and 18.4%, respectively). Furthermore, *joy* is remarkable because it appears to have no exact tendency. Thus, the explication of *joy* is very balanced. 36.8% lie within the first interval of the scale, 39.5% lie in the second interval and 21.1% lie in the third interval of the scale.

Some explications are considerably more precise than others. It seems to be the case that the majority of the responses at least coincide the connotation of the concept. Concepts, such as *lie*, *happy*, *hope* and *disappointment*, suggest that it is not impossible to capture the meanings of different concepts in explications. Still, other

¹⁹ As opposed to 23.7 % absolute score.

explications are rather ambiguous and unclear. Even if most of the answers were rated to closer to the target word, this is different from what a truly rigorous analysis of meaning should be able to accomplish. Moreover, the relative score does not capture the internal structure of the explications and thus, can not give any indications for possible reasons for this outcome. This will be discussed in section 5.5.

5.4.2.3 Subtle Distinctions Among Closely Related Words

The explications were chosen in a way that would allow drawing inferences about the participant's potential to differentiate the subtle distinctions which the explications are trying to state. The groups of words which are considered to be closely related are:

- *happy, joy*
- *pleased, contented*
- *sad, unhappy*
- *despair, disappointment, frustration*

As already mentioned, for this analysis, only the absolute score is relevant. In table 3 the first and the second pair of the above list can be seen. As the responses for these explications also overlap across pairs, they are displayed together in one table:

Responses	Explications			
	<i>happy</i>	<i>joy</i>	<i>contented</i>	<i>pleased</i>
<i>happy</i>	9 (23.68%)	8	2	8
<i>joy</i>	2 (5.26%)	3	0	0
<i>content</i>	10 (26.32%)	3	12	2
<i>pleased</i>	0 (0%)	1	1	1
<i>satisfied</i>	10 (28.95%)	1	2	2

Table 3: *Subtle Distinctions: happy, joy, content, pleased*

In the literature (cf. Wierzbicka 1999), *happy* and *joy* are frequent examples for closely related words. There seems to be an overlap in the conceptualization because the explication of *joy* is more often associated with the concept *happy* than with the target word itself. The same applies to the explication of *pleased*, which is surprisingly more often associated with *happy* than with the target word. Most surprising is the overlap between the explication of *happy* and *contented*. Although the target word *happy* has been named relatively often, *contented* and *satisfied* occur just as often as a response.

Thus, it must be concluded, that, although the explication of *happy* highlights the similarities with *contented* fairly well, it fails to bring out the subtle differences, as it does for *joy* and *pleased*, as well. Only the explication for *contented* seems to be straight forward. Possible reasons will be discussed in the next section (cf. 5.5).

The third pair of closely related words is *sad* and *unhappy*. Both explications are hardly ever associated with either one of the target words and in general the explications seem to be rather ambiguous. Therefore, there can be no statement with regard to the potential of bringing out subtle differences because there is not the smallest degree of accuracy to begin with.

Within the fourth group, *disappointment* clearly stands out. With a match of 55.3% and no overlaps with any of the closely related words, the explication seems to be fairly clear. Even so, for *frustration* and *despair* the situation is different. The explication of the former overlaps with *disappointment*; and the explication of the latter is conceptualized in terms of *depressed*. This is actually predicted by Wierzbicka, who states: "the component 'I can't think: some good things can happen to me' links *despair* also with depression" (1999:70). Nevertheless, she sees *despair* as "more overwhelming and more directly life-threatening than depression" (ibid.). In the conceptualization of the explications this difference was not recognized as predicted and instead, *depressed* was the most frequent association for *despair*.

Responses	Explications		
	<i>despair</i>	<i>frustration</i>	<i>disappointment</i>
<i>despair</i>	4	0	0
<i>frustration</i>	1	3	0
<i>disappointment</i>	0	9	21
<i>depressed</i>	12	1	0

Table 4: *Subtle Distinctions: despair, frustration, disappointment*

It is striking that for most of the groups of closely related explications,²⁰ there seems to be a strong and a weak one. That is, for the pair *joy/happy*, *happy* has the highest relative and absolute scores. For the pair *pleased/contented*, *contented* has the highest relative and absolute scores; and for the group *disappointment/despair/frustration*, *disappointment* has the highest absolute scores.

²⁰ Except for *sad* and *unhappy*. (cf. Appendix C1)

Possible reasons for this will also be considered in the discussion. To sum this part up, if NSM claims that subtle differences can be explicated, then this claim has to be subjected to native speaker's judgments as well. However, the results of this test suggest that for the most part, subtle distinctions or fine grained differences among related words are not recognized by native speakers English.

5.4.2.4 Regional Variation

Tendencies of regional variation (cf. figure 10) can only be made out, if at all, to a small extent within the absolute scores. Here, indeed, Australian speakers of English seemed to conceptualize explications in terms of the target words the most. Nevertheless, they only seem to have a small advantage, which is lost as soon as the relative scores are considered. In doing so, there are no significant differences in the conceptualization among different speakers of different varieties. In any case, more data would be needed in order to make any relevant statements about regional variation.

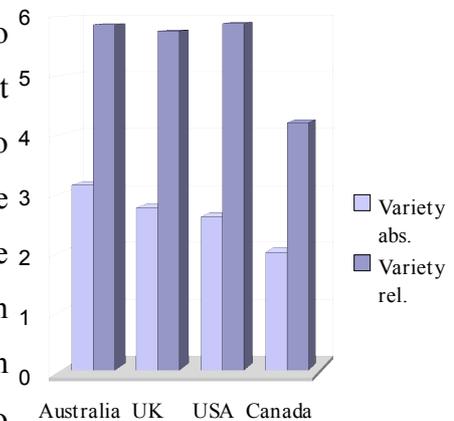


Figure 10: Regional Variation

To sum this up, in this test, the explications were not as intelligible as their primitive constituents. Omitted answers as well as the diversity of answers in most cases suggest that it is rather difficult for the participants to make sense of the explications. Apart from that, it was found although the absolute score is low for the majority of cases, tendentially the answers of the respondents go into the right direction. However, no absolute generalizations can be made as to how this would be in other domains or with different participants.

5.5 Discussion

5.5.1 Interpretation of the Results

In order to study the causes for the findings it is worthwhile to have a closer look at the explications. It had been noted in the previous section, that the responses for the explication of *pleased* overlap with *happy*. That is, the explication of *pleased* had been associated often with *happy*; but they have more responses in common as well:

<i>happy</i>	<i>pleased</i>
9 <i>happy/happiness</i>	8 <i>happy/happiness</i>
1 <i>gratitude</i>	1 <i>gratitude</i>
1 <i>positive</i>	5 <i>positive/positive thinking</i>
10 <i>satisfied</i>	2 <i>satisfied</i>
1 <i>hope</i>	3 <i>hope</i>

Table 5: Comparison of *happy* and *pleased*

Many responses for *pleased* and *happy* overlap. Taking a look at the explications, this is not surprising. They are very similar and differ only slightly in some components:

(1) X was happy =	(1) X was pleased =
(2) X felt something (because X thought something)	(2) X felt something because X thought something
(3) sometimes a person thinks:	(3) sometimes a person thinks:
(4) "some good things happened to me	(4) "something good happened
(5) I wanted things like this to happen	(5) I want this to happen"
(6) I don't want anything else now"	
(7) when this person thinks like this this person feels something good	(6) when this person thinks this this person feels something good
(8) X felt something like this	(7) X felt something like this
	(8) because X thought something like this

Table 6: Comparison of the Explications of *happy* and *pleased*

For example, *pleased* lacks (among others) the component in (4) 'to me' as well as (6) 'I don't want anything else now'. For the participant to realize the differences between the two explications s/he has to recognize these small variations in them and has to associate them with the respective concept. This does not seem to be the case, because the explication of *pleased* was almost as often associated with *happy* as the explication for *happy* itself. Instead, it seems to be the case, that particular components in an explication can be held responsible for certain associations by the participants. The component 'I don't want anything else now' appears in both, the explication for *happy*

and *contented*. For both explications, *contented* and *satisfied* scored very high:

Response	Explication of	
	<i>happy</i>	<i>contented</i>
<i>contented</i>	10	12
<i>satisfied</i>	10	5

Table 7: Comparison of *happy* and *content*

This points to the fact, that not the explication of *contented* as a whole is responsible for the high absolute score (and also the high relative score, as *satisfied* was rated very 'close' to *contentment*). Instead, it seems like the component 'I don't want anything else now' is responsible for that. Other instances in the data support this prediction. The explication of *sad*, for example, contains the component 'I know I can't do anything'.²¹ It does not seem far fetched to assume that the most frequent response, *helplessness*, is a result of the direct association of the concept with this particular component. When going through the data with this assumption in mind, many responses, which might have seemed like coincidental guesses before, appear to be rather commonsense. The table below shows components taken from the respective explications and selected answers given by the participants. I suggest that this particular component is responsible for the answers:

²¹ Cf Appendix A 4.

Explication of	Component	Answers by the Participants (occurrences)
<i>sad</i>	'I know I can't do anything '	<i>helpless (9), impotent (1)</i>
<i>happy</i>	'I don't want anything else now'	<i>content (10), satisfied (10)</i>
<i>content</i>	'I don't want anything else now'	<i>content (12), satisfied (5)</i>
<i>hope</i>	'I don't know what will happen'	<i>uncertainty (1)</i>
<i>hope</i>	'Some good things can happen'	<i>possibility (1), anticipation (2), faith (1), positive (3), optimistic (7)</i>
<i>hope</i>	'I want these things to happen'	<i>wishful thinking (2), positive (3), optimistic (7)</i>
<i>fear</i>	'I don't know what will happen'	<i>uncertainty (1), unsure (1), undecided (1)</i>
<i>fear</i>	'I don't know if I can do anything'	<i>powerlessness (1), helpless (1), worry (2), hopeless (1), doubtful (1), apprehensive (1)</i>
<i>despair</i>	'I can't do anything'	<i>helpless (1), hopeless (2)</i>
<i>despair</i>	'I don't know how I can live now'	<i>depressed (12)</i>
<i>frustration</i>	'now I see that I can't do it'	<i>resignation (1), lack of confidence (1), defeat (2), lost (1)</i>
<i>unhappy</i>	'I can't not think about it'	<i>obsession (1), wanting to forget (1), traumatized (1)</i>
<i>despair</i>	'I can't think: some good things can happen to me'	<i>depressed (12)</i>

Table 8: *Salient Components in Explications*

Note that similar components, such as those in *fear* and *hope*, provoke similar answers in different explications. It would be interesting to test which concepts participants associate with the components if these are presented in isolation. Especially responses such as *obsession* or *impotent*, which stood out in the ranking for the relative score, make sense now. Clearly, someone who 'cannot do anything' is impotent while a person who 'cannot think of anything else' might be obsessed with something.

An explanation I can think of is this: all the explications are very similar to one another in their structure and in their wording. At the same time, they use a very limited or restricted vocabulary. Therefore, to distinguish between the explications participants unconsciously select the component which is most intelligible and project its meaning onto the whole of the explication. This is done regardless of any of the fine grained differences such as the use of past tense or progressive aspect. Although these differences are the result of detailed analysis and are intentionally included by the linguist because they are held to be necessary to distinguish the meanings of concepts,

these differences are less likely to have an effect on the conceptualization of the explication. This would also mean that prototypical scenarios, which are incorporated into the definitions of emotional terms and many other semantic fields as well, do not attain the desired effects, that is, to link the hypothetical scenario with a concept or a hypothetical situation. Most of the time, the component which is most salient to the participant determines his or her associations, not the hypothetical scenario.

5.5.2 Drawbacks of the Test

There are a few drawbacks to the test. Some of these drawbacks are peculiar to the present test, while others are common to semantic testing in general. First of all, the sample size could be considered a disadvantage. While the thirty-eight questionnaires allow for tendential inferences to be drawn, a larger sample would be needed to provide for more solidified results. This would strengthen patterns and tendencies which have been established in the present test and give them more significance.

Secondly, the questionnaire itself and the acquisition of participants can be seen as a drawback. As the acquisition of participants took place primarily through fellow students or personal contact to native speakers via Internet, it turned out that one specific age group (i.e. 20-29 years) was dominant. In NSM theory definitional success is not dependent upon the age of the speakers and thus, this should not be problematic to the validity of the results. However, the distance to the participants which is created through contact over the Internet could be more of a problem as this might have a negative influence on the motivation of the participant. Nevertheless, the results did not reflect this lack of motivation. When looking at the parameter 'omitted answers' the value does not increase towards the end of the questionnaire.

Thirdly, a more serious drawback than those listed above constitutes the procedure of data analysis. While the test of substitutability is suggested as the primary method to verify NSM analyses no such procedure has been described in the literature. Therefore, parameters and means for the evaluation had to be set up from the scratch and did not follow a standardized procedure. The test was asking for associations with respective explications. Since the obtained data consisted of concepts and word

meanings, a classification of these is difficult. Accordingly, the ranking which was set up in order to evaluate the data was based on intuition as well. This method is certainly vulnerable to criticism. To delimit negative effects, which a ranking based on intuition could have, rankings were set up by several persons and the mean was calculated.

A fourth drawback applies to semantic testing more generally. As Charles Kreidler (cf. 1998:12) notes: "people differ considerably, and circumstances differ considerable, so that the way individuals behave in a given situation is not necessarily an indication of what their deeper competence is. Personality factors such as willingness to cooperate, memory, attention, recent experience, can greatly affect performance". On the one hand, this can be seen as a major drawback to semantic testing, which accounts for responses that in part vary greatly. This argumentation is similar to the criticism by Riemer who states that intelligibility is a relational property which is subjective. It follows that intelligibility "can only be measured by how successfully something *is actually understood* by someone on some occasion" (2005:81, original emphasis). On the other hand, both objections are the of the strongest arguments in favor of large scale testing of this kind. Only by testing explications with a great number of participants can individual differences in motivation, the situation, memory and attention be overcome in that tendencies and patterns evolve from the collective answers.

Finally, it has to be mentioned that the generalizations to be drawn from the test are limited. Although this is not a true drawback, but it has to be brought to the attention of the reader. Most of the explications were from the semantic domain of emotion terms. According to Goddard and Wierzbicka abstract terms are easier to define than concrete concepts. Therefore, the same test done with meanings of a different domain may give an entirely different picture. Despite these particular weaknesses of the methodology I believe the results to give meaningful insights into the conceptualization of explications by non-specialist native speakers of English. The most outstanding outcome of the test, the salience of particular components to the participants, which had been discussed in the previous chapter, deserves attention and further investigation, in any case.

6 A DISCUSSION OF NATURALNESS IN THE NSM APPROACH

The NSM approach intends to strike a balance between using ordinary language in semantic analysis and being a formal language at the same time. Hence, 'natural semantic formalisms', i.e. explications, are developed to combine the advantages of both. On the one hand, their vocabulary is derived from ordinary language and thus, intuitive intelligibility is claimed (cf. Wierzbicka 2003). Accordingly this solves problem of terminological obscurity "which dog[s] most other semantic methods" (Goddard 2002:5). Therefore, it constitutes the main methodological advantage over other lexical semantic approaches because it enables verification of the explications by native speakers. It is a concern of this paper to investigate the 'naturalness' in this respect and to show that the methodological advantage cannot be maintained. I have been arguing that it might be an advantage for the specialist that the NSM is based on natural language, but this does not secure the accessibility to the lay person. As intelligibility to *any* native speaker is advocated by NSM proponents, this has been tested in the preceding chapter, in order to get a clearer picture about the actual status of the methodological advantage. On the other hand, the vocabulary and its rules of combination are restricted. Because of that, the NSM is said to be some kind of formal metalanguage (cf. Wierzbicka 2003). These two claims of naturalness and formalization were perceived to be somewhat contradictory and that is why the explications have been termed 'natural semantic formalisms' in the heading. It is the claim of the methodological advantage, its relation to the naturalness and the formalization of the theory which shall be discussed in the present chapter. Considerations from the preceding chapter will be included.

6.1 Naturalness of the NSM Vocabulary

Semantic primitives, which correspond to natural language, are said to have two advantages. For one thing, they are supposed to be concrete and, thus, testable (cf. Goddard 2002:6). For another thing, NSM primitives are not definable or further decomposable and, thus, simple. Following Leibniz' argumentation Wierzbicka claims

that they are self-explanatory and do not need any further explanation. Therefore, semantic primitives are intuitively clear (cf. 1996). The following two sections will be dealing with these two issues.

6.1.1 Concrete or Abstract

Although the nature and the status of the NSM primitives are not the central issue in this paper, it cannot be left out in a discussion of the naturalness of the NSM. Therefore, it will briefly be touched upon. It is one of the core assumptions in NSM theory that the semantic primitives are carved out of natural language and, thus, directly correspond to lexical items in natural language. In fact, semantic primitives need to have equivalents in all languages, because they are claimed to be universal as well. Nonetheless, authors as Lisa Matthewson doubt the status of the semantic primitives. Being a formal semanticist, she illustrates her preoccupation with the example of the primitive ALL, which is supposed to correspond to English *all*. She notices a distributional difference and contextual restrictions between *each*, *every* and *all*. Therefore, she questions whether or not *all* properly represents ALL. Matthewson concludes that the primitive ALL stands for a more abstract idea of the concept (cf. Matthewson 2003). This has far reaching consequences for testability, on the one hand, and for the identification of the primitives across languages, on the other. Matthewson is not convinced by the cross-linguistic research and questions "the ease and speed with which NSM linguists conclude that elements instantiate ALL" (Matthewson 2003:268). To go further into detail is beyond the scope of this paper, which focuses on the naturalness of the explications. As these conclusions do not directly affect the argumentation of the discussion, it will not be further investigated here. Nevertheless, it has to be pointed out, that the naturalness of the primitives is subject to review and criticism just as much.

6.1.2 Simplicity and Clarity

The terms simplicity and clarity seem to have several meanings as used by the NSM proponents. First of all, they can refer to the fact that semantic primitives are not further decomposable (cf. Wierzbicka 1999:8). Secondly, they are intuitively

understandable without further explanation (cf. Wierzbicka 1992b:386). The third sense, which results from the previous two, is that they form a mini-language. Broken down to the English version of the primes, they constitute some kind of basic English. In any case, the 'simplicity' of the primitives raises issues.²² For one thing, although the semantic primitives might be intuitively understandable, once they are used in an explication they create structural complexity. This will be investigated in section 6.1.2.1. For another thing, despite the fact that the primes should be intuitively understandable, it is precisely this simplicity which creates vagueness of the definitions. A discussion of this aspect will follow in section 6.1.2.2.

6.1.2.1 Structural Complexity of the Explications

The simplicity of the elements in isolation is taken to be a guarantee for intelligibility (cf. Goddard 2002:5). Yet, even if one accepts NSM primitives to be simple elements and if one accepts that they can be understood in themselves, there is no reason to believe that the explications are equally intelligible. On the contrary, an explications "internal constituency (subordination, *like* clauses), its use of deictics and variables, and its invocation of part-whole structure, the structural complexity of this paraphrase offsets any of the simplicity claimed for its lexical constituents" (Riemer 2005:77). Accordingly, the advantage of using ordinary language in NSM is lost because of the complexity of its syntax (ibid.). This was partly confirmed by the test conducted previously in this paper. Although, some definitions were more successful than others, the test did not confirm that the definitions are intuitively intelligible and easily accessible. For this to be the case, the answers of the participants would have had to be more precise. The complexity within each explication, and especially the similarity among the explications, seems to be a problem in the conceptualization the intended meanings. Attempts to justify moderate definitional success frequently involves the argument that semantic analyses, i.e. explications, are "provisional and to a greater or lesser degree incorrect" (Wierzbicka 1996:213). This may be a valid argument in many instances, because many definitions still have to be improved, but in

²² Some authors, such as Riemer (2005:81), object that simplicity is not a criterion for intelligibility in the first place. He argues that the success of a definition is dependent on prior knowledge. In this view, structural complexity and vagueness of definitions could be overcome if an explication is classified as something previously known. This was also confirmed by the test, in which components that were associated with a familiar meaning were taken for the meaning of the explication (cf. 5.5.1).

the case of structural complexity this justification cannot apply. Since any future versions of the explication are not likely to be less complex, the same criticism could be applied then (cf. Riemer 2005:430).

Moreover, Paul Kay criticizes that combinatorial semantics of natural language seems to be taken for granted. He illustrates his criticism with an example: "Assuming we agree on the meanings of the individual words, if we disagree on the meanings of the sentences, then at least one of us has failed to correctly compose the meanings of the sentences." (Kay 2003:239) Thus, while each semantic primitive might be intuitively clear and simple in itself, the way in which they are combined, and are made sense of, may not. In the process of setting up an explication, individual primes are combined and translated into components representing the meaning. Because of the structural complexity the ways differ in which the explications are conceptualized. Although it has not been tested in chapter five whether or not the meaning of the primitives is agreed upon, there clearly were differences in how the explications are conceptualized.

These two arguments both relativize the naturalness of the NSM vocabulary considerably in that the primitives might be quite simple (and natural) in themselves, but when combined lose this advantage. Thus, complexity of the definitions works against the naturalness which the vocabulary may have had at the outset. Accordingly, native speaker still have problems to make sense of the explications and do not at all agree on the paraphrased meaning.

6.1.2.2 Vagueness of the Explications

It has just been mentioned that the NSM and its restricted vocabulary is considered a mini-language. Most importantly, the mini-language is taken to possess the same expressive power as any natural language (cf. Goddard 2002:5). At the same time, the NSM has been criticized for producing rather ambiguous definitions. Aitchison, for instance, complains that the basic elements have "the disappointing effect of making almost all definitions vague. (...) At most it (the explication, TM) captures the notion of negative emotion" (2006:79). Looking back at the test in chapter five this can be confirmed. Many of the responses to the explications tested are very general and, thus,

vague terms such as *positive*, *negative*, *optimistic* and *pessimistic*. They merely indicate a good or bad connotation. Furthermore, the majority of the responses, even if they were not rated close to the target word, at least captured the positive or negative aspect of the target word. However, this is far from the original aim of NSM explications to state the meanings in a precise manner.

Other authors see the vagueness not primarily in the simplicity of the semantic primitives, but in the meaning of particular primitives and their use. While Durst assures that "there are no fuzzy expressions in the explication (of green)" (2003a:177), Matthewson objects to that. She argues that primitives such as LIKE, which are included in all the definitions of emotion words, are indeed vague: "it remains to be shown that the use of LIKE is any less problematic for the potential testability of explications than the use of etc." (Matthewson 2003:268). '*Etc.*' was rejected as a vague term leading to non-predictive definitions and a low level of accuracy by Goddard (cf. 1998c:33). To sum this point up, the vagueness of definitions is a problem, because it makes a definition less accurate. At the same time, vagueness decreases the intelligibility as well as the expressive power of explications and, hence, the chance informants have to be right in their associations. Therefore, testability becomes questionable.

6.2 NSM Explications

In the following two sections, the role of introspection in setting up explications and the restrictions on the explications, which are to ensure their naturalness, will be discussed.

6.2.1 Setting Up Explications

The substitution test is strongly advocated by Wierzbicka, Goddard and other proponents of NSM theory. Again, the claim is that

definitions of this kind are intuitively intelligible and intuitively verifiable; they can, therefore, be discussed with native speakers, tested against native speakers intuitions, and revised and amended on the basis of such discussions. (Wierzbicka 1992a:550)

It has been mentioned earlier, explications are arrived at by relying on introspection. Geeraerts quotes Wierzbicka (1985) in saying that "chasing the phantom of objectivity through supposedly scientific methods one loses the only firm ground there is in semantics – the *terra firma* of ones own deep intuition" (1999:170). Even so, introspection is not infallible. On the contrary, informants often vary in their own responses and their judgments can be inconsistent. Accordingly, the analyst cannot consider himself free of these inconsistencies and, therefore, it is highly questionable whether or not introspections are *terra firma* at all. Geoffrey Leech, thus, argues that introspections, if not backed up by more objective evidence, are subject to error and hence, not reliable (cf. 1970a).

One way to back up intuitions is semantic testing. In the right context semantic testing is a very useful tool. That is, semantic tests have several functions. On the one hand, they could be used as discovery procedures in order to elicit data. On the other hand, it could be used to test a hypothesis. As Wierzbicka explained, "a definition is a hypothesis about the meaning of a word" (1992a:551). Thus, semantic tests could confirm the analysis instead of simply relying on personal introspections. If semantic tests are applied in this way, as a part of empirical verification rather than to elicit data, they can be considered useful, especially for testing paraphrases (cf. Leech 1970a). As a paraphrase can be considered to be 'cognitive synonymy' (cf. Leech 1970b:9), a possible test consists of asking informants to "express the same idea in different words" (cf. Leech 1970b:266). This procedure would not be a conscious judgment, which has the advantage that it "does not suffer from the most severe drawback of grammatical judgments as a source of data: *viz* the informants preconception instilled by education" (ibid.).

Again, it is a central argument in the NSM approach that testability and verifiability of the analysis are its major advantages. To quote it once more: "A good explication can be verified by ordinary native speakers of that language as to, whether the explication and the original expression mean exactly the same thing" (Yoon 2004:2). Moreover, explications are simple and intuitively understandable. Goddard assumes "that sentences composed of NSM primitives should be very easy to comprehend". He goes on saying that "as far as I know, however, no experimental work has been done on this question" (Goddard 1998a:147). It remains elusive to me that a claim so central to

the whole approach is based on introspective judgments of a handful of specialist-speakers, while it is not actually tested how a greater number of speakers respond to the explications. As Paul Kay states "NSM theory has given us nothing beyond assertion in support of the claim that the content of each of its analysis are the content of the thoughts of speakers when they employ the word analyzed" (2003:240).

6.2.2 Problems in the Architecture of Explications

Persisting Obscurity

The architecture of NSM explications does only allow for lines and indentations as basic instruments. So-called technical terms or devices, binary features, logic symbols and arbitrary signs are not allowed. They are not considered self-explanatory and not natural. Nevertheless, it is not always easy to see the distinction "in terms of being an arbitrary technical device, between a referential index and the use of indentation" (Matthewson 2003:268). According to Matthewson, line breaks and indentations are mostly necessary to understand the reference of THIS, which is frequently used in the explications. She argues that despite these measures, the reference of THIS mostly remains obscure. In addition to that, variables *are* used in explications. Even if they are not used to the same extent as in more abstract languages, they are not natural language expressions. They "are performing a similar function to indexing, via the arbitrary association of alphabetic symbols to referents" (Matthewson 2003:270). While Durst objects that indentations are still readily translatable into ordinary language, for example by using intonation, he admits that "in this sense, [explications are] not completely free from abstract symbols" (2003b:301). And indeed, when the questionnaire was tested at the beginning, in the preceding interview two participants stated that they were having difficulties interpreting the variable X. They suggested to replace it with an actual name. The insertion of a name instead of the variable would not constitute a possible alternative. A name would most likely be associated with gender and could influence the conceptualization as a whole.²³

Paul Kay even goes one step further. He accuses the NSM of persistent obscurity by not using standard notations (cf. 2003). Kay sees in the introduction of

²³ For example, I could imagine that a female name inserted into the explication of *to lie* could result in an increase of the answer *gossip*.

indentations and line breaks as problematic because they "add nothing in the way of understandability for the non-specialist and introduce significant confusion for the specialist" (2003:241). Taken these to arguments together, NSM efforts to avoid technical devices programmatically must be questioned. It is not clear where to draw the dividing line. Conventions are introduced which are just as arbitrary (i.e. indentation and the use of variables). By calling them iconic naturalness has been suggested. Nevertheless, this has to be doubted seriously.

Semantic Molecules

A further issue in the architecture of the explications is the use of semantic molecules (cf. 3.4.4). Although they are an appealing method to increase the expressive power of the NSM explication they seem to evade meaningful testing, or at least make possible outcomes of a test meaningless with regard to their cognitive reality. It has to be emphasized again that it is precisely this cognitive reality which makes the claim for intelligibility and naturalness so central to the whole argument. It is also the reason why the NSM claims methodological priority. Nevertheless, semantic molecules seem to be a way to get around definitional problems which the theory has with concrete concepts. That is, many concepts can only be explicated with the help of non-primitive concepts. Lets take the explication for *head*:

head
 a part of a person' s body
 this part is above all the other parts of the body
 when a person thinks, something happens in this part (Wierzbicka 1996:218)

This explication is by no mean unambiguous. One could equally conceptualize it as *brain* or even as *heart*, which was in fact suggested by one of the first participants who filled out the alternative questionnaire that had been tested at the beginning. Of course, this is just one participant's judgment, nevertheless it shows that even a short explication as the one above is not necessarily straightforward or clear. Yet, the explication of *face* is simply taken as correct and plugged into another explication:

face
 a part of a persons head
 it is on one side of the head
 it has parts
 often, when a person feels something,
 something happens in this part

other people can see this
because of this, when a person feels something,
other people can often know something

(Wierzbicka 1996:218)

To insert the whole explication of *head* into the explication of *face* would make it much longer and not comprehensible at all. For this reason, *head* serves as a shortcut. The explication of *head* cannot be considered free from error but in the explication of *face* it is taken as an established molecule. This might be even more obvious with the previously cited explication of *cats* (cf. figure 1). By nesting semantic molecules the explication it gets a formula-like structure. The molecules increase the expressive power of the NSM but also constitute a lift of the restrictions to the vocabulary. Intermediate semantic decomposition basically allows any concept to be used as a molecule as long as it has been explicated. Since the molecule's explication is based solely on introspective judgments the actual use of them the actual accuracy of each molecule is nebulous. Naturally, explications containing molecules will be easier to understand but at the cost of verifiability and rigor.

6.3 Scientific Standards

The NSM approach insists on its empiricism and its scientificity (cf. Riemer 2005:192). Rigorous analysis of word meaning by means of a constrained metalanguage is part of that. Furthermore, it is asserted that the NSM is "a framework which, moreover, submits itself to a higher standard of verifiability than any rival method" (cf. Goddard 2002:11). A precondition for verifiability is testability of a hypothesis in the first place. It is the naturalness of the vocabulary which is taken to enable testability: "an indisputable advantage of this kind of explications was that they were readily testable empirically, and through the intuitions of native speakers" (Durst 2003a:163). While the majority of the empirical research is done on the existence of the primitives across languages,²⁴ the lack of large scale testing of the explications has also been pointed out (cf. Matthewson 2003). Still, one important conclusion to be drawn from the test in chapter five is that semantic tests of this kind should be central to any research program. The test has revealed certain patterns and tendencies in the conceptualization

²⁴ (cf. Goddard and Wierzbicka 2002)

which might otherwise be hard to see from close up.

6.3.1 Testability in Theory

Riemer points out that "in the era of post-empiricism in the philosophy of science, falsifiability is no longer a universally accepted characteristic of good science" (2005:102). In any case, as the claim for verifiability is so central to the NSM approach in that it is thought of as the main methodological advantage, it deserves to be discussed.

Part of the process of verification, or falsification for that matter, is the handling of disconfirming evidence. Statements of Wierzbicka and Goddard, in this respect, seem to be of an inconsistent nature. Goddard names three considerations when identifying semantic primitives. One of these is the meta-linguistic adequacy of the primes or their ability to "enable reductive paraphrase of the entire vocabulary and grammar of language at large, i.e. it is intended to be comprehensive" (2002:16). According to Riemer, the attractiveness of the NSM approach is exactly universality: "that it provide a way of analyzing *all* meaning" (2005:105, original emphasis). However, statements of this kind, which are cornerstones of the theory, are often relativized to an extent which makes the NSM slip off into ordinariness: "Perhaps the venture will work out well in some respects and not so well in others; there is no reason to assume *a priori* that it is an all or nothing affair" (Goddard 2002:6). In the same fashion, the NSM as culture-independent '*tertium comparationis*' becomes maximally culture-independent. Semantic primitives, which are simple, to be understood in themselves and do not need further explanation, become maximally self-explanatory (cf. Wierzbicka 1992b:386), maximally simple and maximally clear. Semantic nuances, "which have been claimed to be either impossible or excruciatingly difficult to describe" (Goddard 2002:6), are relativized to be "maximally-fine grained, explicit and transparent" (Goddard 2006b:210). It has to be noted that 'maximally' is to be understood in the sense of "as much as possible" (Wierzbicka 1999:2).

The most noteworthy restatement is the notion of "partial universals" (Wierzbicka 1992b:387). While it seems comprehensible to speak of 'maximally

universal' within the context of allolexy²⁵ of the NSM primitives talking about partial universals seems paradoxical. Given the claim for exhaustive analysis, not only in the sense that the full range of a words use can be covert but also in the sense that all word meanings of a language can be described, such a relativization of the NSM expressive power is not acceptable. Goddard himself states, that "taken as a whole, the metalanguage of semantic primes is intended to enable reductive paraphrase of the entire vocabulary and grammar of the language at large, i.e. it is intended to be comprehensive" (2002:16). As the whole approach is designed to provide successful definitions, going for "partial coverage" as an explanation for failing definitions would constitute a serious set-back and would be weakening the status of the semantic primitives. In my view, this relativization of very basic theoretical claims of the NSM (its universality, its ability to effectively state meanings and its comprehensiveness), which contributed to its attractiveness in the first place, makes it untestable. The introduction of the modifier 'maximally' blurs the initial goals of the NSM approach and, thus, makes it unfalsifiable.

6.3.2 Testability in Practice

This section is concerned with the hypothetical question whether or not the explications are testable in practice. According to Wierzbicka, "language is an instrument for conveying meaning. The structure of this instrument reflects this function (...)" (Wierzbicka 1996:1). If that is so, then this function must also be reflected in the lexicon of natural languages. The richness and the expressive power of natural languages generally speak in favor of this. The expressive power of language has evolved throughout cultural evolution. The speaker's need for expressiveness is often used to account for processes of linguistic change, for example, grammaticalization (McMahon 1994:164, quotes Meillet 1912).

It is one claim of the NSM approach that it has the same expressive power as natural language (cf. Goddard 2002:5). As all natural languages have arrived at their

²⁵ Allolexes are variant forms of the NSM primitives and refer to the fact that NSM primitives are not claimed to be morphologically isomorphic across languages. Accordingly, allolexes are "two different words [which] may function in different contexts as two different lexical variants of the same simple meaning" (Wierzbicka 2007:45). Examples for allolexy in English are the two variants of I, namely *I* and *me* or the variants of NOT, *don't* and *no* (cf. Goddard 1998c:59).

expressiveness as a result of an on-going development and change, it seems implausible that a minimal sub-set of ordinary language consisting of sixty-three primitives can have the same expressive power. Thus, the question arises whether or not native speakers could ever be able to confirm the subtle distinctions or semantic nuances among two explications. In other words, suppose two ideal explications, as analyzed by specialists, correctly reflected the concept of two closely related words, would it be possible for native speakers to identify these differences? Or, would vagueness get in the way? Maybe speakers are used to have more precise tools, i.e. words, at their disposition? These questions also reflect the distinction between specialists and non-specialists. While specialists can identify components, which distinguish closely related words, it is not clear, whether non-specialists conceptualize the components which are translated into NSM in these terms. Ideally, the intentions of the specialist should be reflected in the responses by the non-specialist. Only then, the claim for equal expressive power could be upheld and the naturalness be justified.

The test in chapter five showed that subtle distinctions were not recognized. However, these results are not indicative of the above questions. It is not clear, what the reason for the failure to discriminate closely related meanings was. There are several options. Possibly the informant's motivation was too low, but as the responses indicate effort this is not a likely explanation. Another possibility is, that the explications indeed require more work. The third option is that it is not possible because the NSM does not have the same expressive power. In any case, this can only be further investigated by testing explications on a larger scale that it is currently done.²⁶ Until then, one should refrain from claiming that the NSM actually does have the same expressive power.

²⁶ As far as I know, no testing procedures have been described in the literature, except for the possibility of discussing the explications with native speakers (Wierzbicka 1992a:550).

7 CONCLUSION

In the present paper it has been argued that methodological priority of the NSM cannot be attested. In the first part, different aspects of the study of meaning were presented and types of metalanguages were compared and classified. In chapter three, the aspects of meaning were related to the NSM and it has been shown how they enter the approach. Chapter four was necessary to point out specific claims of the NSM approach, namely the naturalness and explanatory effectiveness. It was established that the former is a precondition for testing the latter. On the other hand, a test of the explanatory effectiveness was used to get information about the naturalness in the first place. It had been established in chapter four that the naturalness of the NSM is based on the primitives and their expressive power. Thus, by testing the explanatory effectiveness conclusions were to be drawn about the naturalness, i.e. the expressive power and the intelligibility. The results of the test indicated that the explications are not as intelligible as their constituents, which Wierzbicka holds to be self-explanatory. On the contrary, participants conceptualized the explications quite differently from what they were thought to represent. Moreover, closely related words could not be differentiated from one another in a satisfying manner. Generally, this was in accord with what was expected from the outset. Nonetheless, the most unexpected finding was the impact of single components within explications. Among the answers given by the participants particular components could be identified which are likely to have triggered certain answers. This means, not the explication as a whole, i.e. all of its components taken together, but the most salient components were apparently responsible for the judgments of the native speakers. This is interesting because the prototypical scenarios which are incorporated into the explications seem to be without the desired effect. Moreover, the test revealed particular answer schemes with regard to previously established parameters. Although few answers matched the concepts which had been explicated, the majority of the explications seemed to be rather ambiguous and obscure. In any case, the results underscored the importance of large scale testing because these patterns and tendencies in the conceptualization of the explications can not be revealed through introspection alone.

The argumentation against the methodological priority of the NSM

approach was generally backed up by the results. First of all, the naturalness of the primitives in relation to the explications was investigated. I concluded that, despite the simplicity of individual primitives, structural complexity and vagueness are part of the explications and impede understanding for the non-specialist native speaker. Consequently, this casts doubts on the proclaimed 'cognitive reality' of the primitives and the NSM explications. Secondly, the role of introspection in setting-up explications as well as the restrictions on explications were discussed. I reasoned that testing, which goes beyond introspection, is just as necessary for a theory which claims intuitive verifiability as the 'ordinary language primitives' themselves. With regard to the architecture of the NSM, semantic molecules and the use of indentations were argued to be problematic to the claim that there are no technical devices in explications. Finally, the scientific standards were discussed and theoretical as well as practical problems were identified.

In line with this argumentation I do not see that the NSM does enjoy methodological advantages over other approaches. Accordingly, NSM claims should be toned down because intelligibility to any native speaker and, thus, intuitive verifiability cannot be attested. I have mentioned several times throughout the paper that I do think that the NSM can be a very useful tool, indeed. However, I suggest two restrictions to that statement. On the one hand, the approach should introduce a distinction between specialists and non-specialists because linguistic training and understanding of the NSM is necessary to interpret it correctly. For the specialist, I think, NSM explications can be very telling. The second restriction concerns the domains which are explicated. In my view, explications of abstract concepts, especially those of emotion terms, really are illuminating and very detailed. For this reason, I can also imagine that the NSM is very useful in cross-cultural studies. Cultural scripts, for example, mostly deal with abstract concepts. However, I question the usefulness of explications of concrete concepts, such as those of *cats* (cf. also explications of color terms). They give the impression that they are explicated just for the sake of it, but I doubt that they reflect peoples concepts about *cats*. Reading this explication, one is reminded of Wierzbicka's and Goddard's requirements for an accurate definition²⁷, which seems to be violated severely in this case.

²⁷ Cf. Wierzbicka 1996; Goddard 1998c; (cf. 3.4.3).

Outlook

Several points of interest for further investigation arose from the experiment and the subsequent discussion. For one thing, it would be interesting to change the whole test set-up in a way that the participants themselves set up explications. However, this could not be done by sending a questionnaire to the participants. It would be considerably more difficult because participants would need at least some instruction and explanation in order to know how to use the primitives and put them together. Comparing the explications resulting from this could give indications as to which components should be included in a definition. Furthermore, it could confirm existing definitions. For another thing, the claim that single components have triggered particular responses should be tested. This could be done by presenting participants with the components (which are, of course, formulated in the NSM), instead of the whole explication. If the responses correspond to the answers of the substitution test, the likelihood that singular components trigger particular answers are increased. A third point of interest concerns the question what facilitates understanding of the explications. To test the so-called 'iconic conventions', such as whether or not the use of indentations has an influence on understanding, would give an indication whether these devices are really natural.

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APPENDIXES

Appendix A: The Questionnaire

A 1: Introductory Statement

Dear Participant,

Thank you in advance for taking part in the following experiment. The main goal is to capture native speaker's intuitions about the meanings of English words. After giving some information about your background and a brief introduction to the task, you will be asked to fill in the required fields. Needless to say, all of the background information you provide will not be passed on to a third party and will be used for data analysis only.

A 2: Background Information

1. Date of birth: (MM/DD/YYYY)

2. Are you male or female?

male
 female

3. Highest educational level:

4. Name the last school/university you've attended:

5. Are you a native speaker of English?

Yes
 No, I am a native speaker of

6. a) Where did you grow up? Please, type in the city and country:

City:

Country:

b) Where do you currently live? Please, indicate the city and country:

City:

Country:

(Only the data relevant for data analysis will be shown in Appendix B)

A 3: Formulation of the Task and the Example

In the following experiment you will be presented with several definitions of English words. As you can see in the example below, one definition can take up several lines. Read through the whole of the definition first. After that, consider carefully which word the definition could stand for. Below the definition you will find 3 lines. Please write down which meanings you associate with the definition. In case you can think of more than one meaning and/or are not sure about your guess, please write down all of your guesses in the order they have occurred to you. For example:

someone (X) can think something like this:
 if I want to do something I can do it
 no one else can say to me: "you can't do it because I don't want this"
 if I don't want to do something I don't have to do it
 no one else can say to me: "you have to do it because I want this"
 this is good for X
 it is bad if someone cannot think this

1st guess:

2nd guess:

3rd guess:

Please keep in mind, this is not a test and there is no such thing as a right or wrong answer. Only your *intuition* counts. For the results to be applicable it is extremely important that you go through the definitions by yourself.

Thank you once more for your time and effort.
 Best wishes and best regards,
 Tina Marusch

A 4: Explications Tested in the Questionnaire

Lexeme	Explication
1. to lie	X said something to person Y X new it was not true X said it because X wanted Y to think it was true people think it is bad if someone does this
2. sad	X feels something sometimes a person thinks like this: I know something bad happened I don't want things like this to happen I can't think now: I will do something because of this I know I can't do anything because of this, this person feels something bad X feels something like this

3. happy	<p>X felt something (because X thought something) sometimes a person thinks: "some good things happened to me I wanted things like this to happen I don't want anything else now" when this person thinks like this this person feels something good X felt something like this</p>
4. pleased	<p>X felt something because X thought something sometimes a person thinks: "something good happened I want this to happen" when this person thinks this this person feels something good X felt something like this because X thought something like this</p>
5. hope	<p>X felt something because X thought something sometimes a person thinks: "I don't know what will happen some good things can happen (some time after now) I want these things to happen" when this person thinks this this person feels something good X felt something like this because X thought something like this</p>
6. joy	<p>X felt something because X thought something sometimes a person thinks: "something very good is happening I want this to be happening" when this person thinks this this person feels something very good X felt something like this because X thought something like this</p>
7. fear	<p>X felt something because X thought something sometimes a person thinks: "I don't know what will happen some bad things can happen I don't want these things to happen I want to do something because of this if I can I don't know if I can do anything" when this person thinks this this person feels something bad X felt something like this because X thought something like this</p>

8. despair	<p>X felt something because X thought something sometimes a person thinks: "something very bad is happening to me" I don't want this to be happening I want to do something because of this I can't do anything I can't think: some good things will happen to me I don't know how I can live now" when this person thinks this this person feels something very bad X feels something like this because X thought something like this</p>
9. frustration	<p>X felt something because X thought something sometimes a person thinks: "I wanted to do something now I thought I could do it now I `see` (have to think) that I can't do it" when this person thinks this this person feels something bad X feels something like this because X thought something like this</p>
10. unhappy	<p>X felt something because X thought something sometimes a person thinks for some time: "some very bad things happened to me I wanted things like this not to happen to me I can't not think about it" when this person thinks this this person feels something bad for some time X felt something like this because X thought something like this</p>
11. contended	<p>X felt something because X thought something sometimes a person thinks: "some good things happened to me before now I feel something good because of this now I don't want other things now" when this person thinks this this person feels something good X felt something like this because X thought something like this</p>
12. disappointment	<p>X felt something because X thought something sometimes a person thinks: "I thought that something good would happen I felt something good because of this I know now: this good thing will not happen" when this person thinks this this person feels something bad X feels something like this because X thought something like this</p>

A 5: Explications of the Alternative Questionnaire

(1) <i>unhappy</i>	(5) <i>envious</i>	(9) <i>climbed</i>
(2) <i>punished</i>	(6) <i>hope</i>	(10) <i>sad</i>
(3) <i>head</i>	(7) <i>contended</i>	(11) <i>revenge</i>
(4) <i>fear</i>	(8) <i>pleased</i>	(12) <i>lie</i>

Appendix B: Master Table

B1: Background Information

	Id.-Nr.	Age	Sex	Highest educational degree	Mother tongue	other	Grow Up City	State
1	08/13/02	24	M	college graduate	yes	no	n/a	Canada
2	10/24/03	65	F	post graduate	yes	no	n/a	USA
3	10/24/04	71	M	post graduate	no	German	n/a	Germany
4	10/24/05	76	F	high school	yes	no	n/a	USA
5	10/24/06	72	F	post graduate	yes	no	n/a	USA
6	10/24/07	21	F	high school	yes	no	n/a	USA
7	10/24/08	69	M	post graduate	yes	no	n/a	USA
8	11/26/09	38	F	master's degree	yes	no	n/a	USA
9	11/26/10	40	M	graduate degree	yes	no	Pittsburgh	USA
10	11/25/11	38	M	bs (university graduate)	yes	no	Pocomoke City	USA
11	11/29/12	25	M	honours	yes	no	Ocean grove	Australia
12	11/29/13	25	M	TAFE	yes	no	Melbourne	Australia
13	11/30/14	24	F	bsc	yes	no	Melbourne	Australia
14	11/30/15		F	Bachelor	yes	no	Melbourne	Australia
15	11/30/16	25	F	Bachelor Degree	yes	no	Adelaide	Australia
16	11/30/17	26	F	college graduate	yes	no	temple	USA
17	12/01/18	25	M	bsc	yes	no	Atlanta	USA
18	12/01/19	23	F	Law Degree	yes	no	Wolverhampton	UK
19	12/01/20	31	F	master's	yes	no	Quimby	USA
20	12/01/21	25	M	Masters Degree	yes	no	Norwich	UK
21	12/02/22	26	F	Bachelor with honour	yes	no	Melbourne	Australia
22	12/04/23	26	M	degree	yes	no	Bristol	UK
23	12/04/24	29	M	some graduate school	yes	no	Onalaska, Wisconsin	USA
24	12/12/25	24	F	BA, College Graduate	yes	no	Irvine	USA
25	12/13/26	20	M	A levels	yes	no	Cambridge	UK
26	12/14/27	54	F	BA German/Education	yes	no	Warren New Jersey	USA
27	12/14/28	27	F	college graduate	yes	no	Enumclaw	USA
28	12/15/29	26	F	Bachelor Degree	yes	no	Cambridge, MA	USA
29	12/15/30	27	M	Bachelor of science	yes	no	Bracknell	UK
30	12/16/31	21	M	A levels	yes	no	London	UK
31	12/16/32	20	F	A levels, grade A	yes	no	Sussex/Birmingham	UK
32	12/17/33	24	F	university	yes	no	La Habra, CA	USA
33	01/03/34	49	F	postgraduate diploma	yes	no	Derby	UK
34	01/04/35	29	F	master's degree	yes	no	Toronto	Canada
35	01/15/36	52	F	PhD	yes	no	Manhattan beach	USA
36	03/07/37	24	M	BA	yes	no	Melbourne	Australia
37	12/18/38	26	F	high school	yes	no	Sayreville	USA
38	12/20/39	51	F	university	yes	no	Hamilton	Canada

B2: Answers Given – *lie to joy*

	Id.-Nr.	1 to lie	2 sad	3 happy	4 pleased	5 hope	6 joy
1	08/13/02	liar	sympathy	greed	hope	hope	thankful
2	10/24/03	lie	frustrated	glad	positive	possibilities	remaining hopeful
3	10/24/04	lie	frustrated	happy	happy	hopeful	elated
4	10/24/05	lie	angry	happy	elated	hopeful	joyous
5	10/24/06	lies	sorry	happy	happy	-	apprehensive
6	10/24/07	lying	honest	feeling	happy	positive thinking	-
7	10/24/08	lie	impotent	satiated	hope	-	hope
8	11/26/09	lie	helpless	satisfaction	satisfied	optimistic	optimistic
9	11/26/10	lie	anxiety	happiness	dream	goal	experience
10	11/25/11	lie	fear	joy	joy	uncertainty	optimism
11	11/29/12	lying	depressed	content	positive thought	positive	pleased
12	11/29/13	lie	bad feeling	content	-	good luck	excitement
13	11/30/14	lie	helpless	content	happy	optimistic	excited
14	11/30/15	lie	guilty	positive	happy	optimistic	-
15	11/30/16	lying	hopeless	satisfied	happy	hopeful	excited
16	11/30/17	lie	helpless	happy	positive thinking	hopeful	excitement
17	12/01/18	lie	frustration	satisfaction	wistfulness	wistfulness	enjoyment
18	12/01/19	liar	helplessness	hope	-	positive	positive
19	12/01/20	liar	despair	joy	-	hopeful	-
20	12/01/21	deception	helpless(ness)	content	pleasure	hope(ful)	content
21	12/02/22	lie	regret	satisfied	-	hopeful	happy
22	12/04/23	lie	guilty	contentment	wonder	anticipation	joyous
23	12/04/24	lie	grief	satisfaction	happiness	hopeful	ecstasy
24	12/12/25	gossip	helpless	happy	pleased	wishful thinking	happy
25	12/13/26	lie	-	happy	-	-	on drugs
26	12/14/27	manipulation	sadness	gratitude	gratitude	faith	joyous
27	12/14/28	lie	helpless	content	fortunate	hopeful	satisfied
28	12/15/29	lie	worried	content	positive	hopeful	sure
29	12/15/30	lie	helplessness	content	happiness	hope	happiness
30	12/16/31	lie	-	content	-	anticipation	happy
31	12/16/32	lie	guilty	happy	anticipation	hope	happy
32	12/17/33	deceit	weary	satisfied	confident	optimistic	happy
33	01/03/34	lie	demotivation	satisfaction	satisfaction	optimism	contentment
34	01/04/35	lie	depressed	satisfied	lucky	optimistic	happy
35	01/15/36	deception	hopelessness	satisfaction	hopefulness	optimism	contentment
36	03/07/37	lie	hopelessness	content	achievement	hope	pleasure
37	12/18/38	lie	helpless	happy	positive	hesitant	happy
38	12/20/39	lie	guilty	satisfied	-	-	-

B3: Answers Given – *fear to disappointment*

	Id.-Nr.	7 fear	8 despair	9 frustration	10 unhappy	11 contented	12 disappointment
1	08/13/02	opportunity	loosing	lost	ignorance	proud	disappointment
2	10/24/03	trying to change things for the better	despair	negative	wanting to forget	optimistic	down in the dumps
3	10/24/04	stymied	frustrated	disappointment	helpless	satisfied	disappointment
4	10/24/05	undecided	calamity	restrained	fearful	serenity	disappointed
5	10/24/06	afraid	distraught	disappointed	stressed	happy	disappointed
6	10/24/07	scared	intuition		negative	luck	good feeling
7	10/24/08	dread	defeat	disappointment	denial	optimism	disappointment
8	11/26/09	out of control	depression	frustrated	depressed	optimistic	disappointment
9	11/26/10	avoidance	depression	anger	depression	satisfaction	rejection
10	11/25/11	fear	hopelessness	loss	regret	enlightenment	disappointment
11	11/29/12	uncertainty	dread	deflated	negative	optimistic	-
12	11/29/13	treptition	despair	foresight	sadness	content	-
13	11/30/14	worried	depressed	disappointed	down-trodden	content	disappointed
14	11/30/15	pessimistic	depressed	-	-	-	-
15	11/30/16	nervous	depressed	disappointed	morbid	relieved	disappointed
16	11/30/17	unsure	depressed	lack of confidence	worried	content	uneasy
17	12/01/18	self-doubt	despair	resignation	obsession	satisfaction	disappointment
18	12/01/19	pathetic	negative	negativity	self-pity	defeatist	negative
19	12/01/20	-	hope	frustration	resentment	rush	hopelessness
20	12/01/21	pessimistic	depressed	defeated	depressed	content	cheated
21	12/02/22	apprehensive	pessimistic	disillusioned	traumatised	content	disappointed
22	12/04/23	anxiety	depression	expectation	stress	contentment	dissatisfaction
23	12/04/24	anxiety	depression	disappointment	depression	contentment	let down
24	12/12/25	-	-	-	-	-	-
25	12/13/26	depression	-	-	depression	-	-
26	12/14/27	powerlessness	powerlessness	facing reality	regret	hopeful	disappointment
27	12/14/28	helpless	depressed	weak	depressed	satisfied	disappointed
28	12/15/29	negatively	faithless	defeat	helpless	certain	disappointed
29	12/15/30	worry	fear	disappointment	depressed	happiness	disappointed
30	12/16/31	anxiety	panic	disappointment	resentment	content	disappointment
31	12/16/32	rubbish	shit	depressed	depressed	content	disappointed
32	12/17/33	pessimistic	depressed	let down	sad	content	sad
33	01/03/34	pessimism	depression	demotivation	depression	contentment	disappointment
34	01/04/35	doubtful	hopelessness	realistic	annoyed	satisfied	disappointed
35	01/15/36	pessimism	despair	discouragement	depression	fulfilment	disappointment
36	03/07/37	hopelessness	despondent	disappointed	anxiety	contentment	disappointment
37	12/18/38	hesitant	helpless	frustrated	depressed	pleased	sad
38	12/20/39	-	-	-	-	-	-

Appendix C: Answer Schemes - Tables and Diagrams

C1: Tables

		Absolute	Relative	Spread	Peaks	S/N
1	lie	33	8.68	3	2	0
2	sad	1	4.69	20	5	2
3	happy	9	7.35	12	4	0
4	pleased	1	4.66	18	5	6
5	hope	14	6.57	14	6	4
6	joy	3	5.27	19	6	4
7	fear	1	4.25	28	3	3
8	despair	4	5.42	20	3	3
9	frustration	3	4.37	20	5	5
10	unhappy	0	4.95	19	7	2
11	contended	12	5.95	16	3	4
12	disappointed	21	6.43	11	2	6

Table C1: Answer Schemes for Explications 1-12

		Absolute	Relative	Spread	Peaks	S/N
2	sad	1	4.69	20	5	2
10	unhappy	0	4.95	19	7	2
3	happy	9	7.35	12	4	0
6	joy	3	5.27	19	6	4
8	despair	4	5.42	20	3	3
9	frustration	3	4.37	20	5	5
12	disappointed	21	6.43	11	2	6
4	pleased	1	4.66	18	7	6
11	contended	12	5.95	16	3	4
1	lie	34	8.68	3	2	0
5	hope	14	6.57	14	5	4
7	fear	1	4.25	28	3	3

Table C2: Answer Schemes: Closely Related Words Grouped

C2: Diagrams

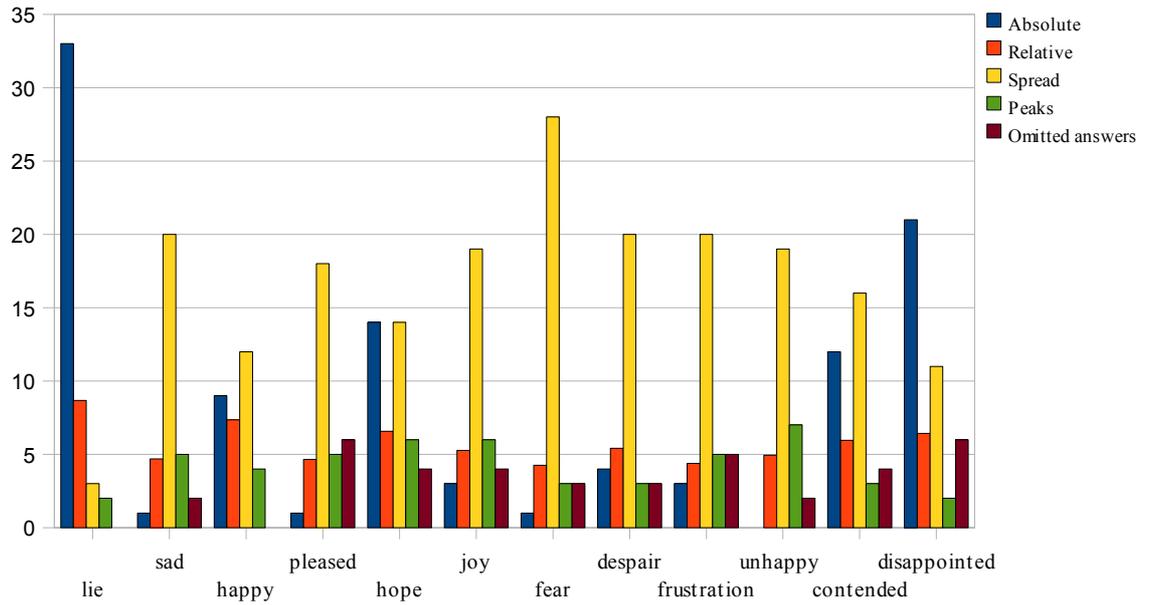


Figure C1: Parameters Ordered by Explication

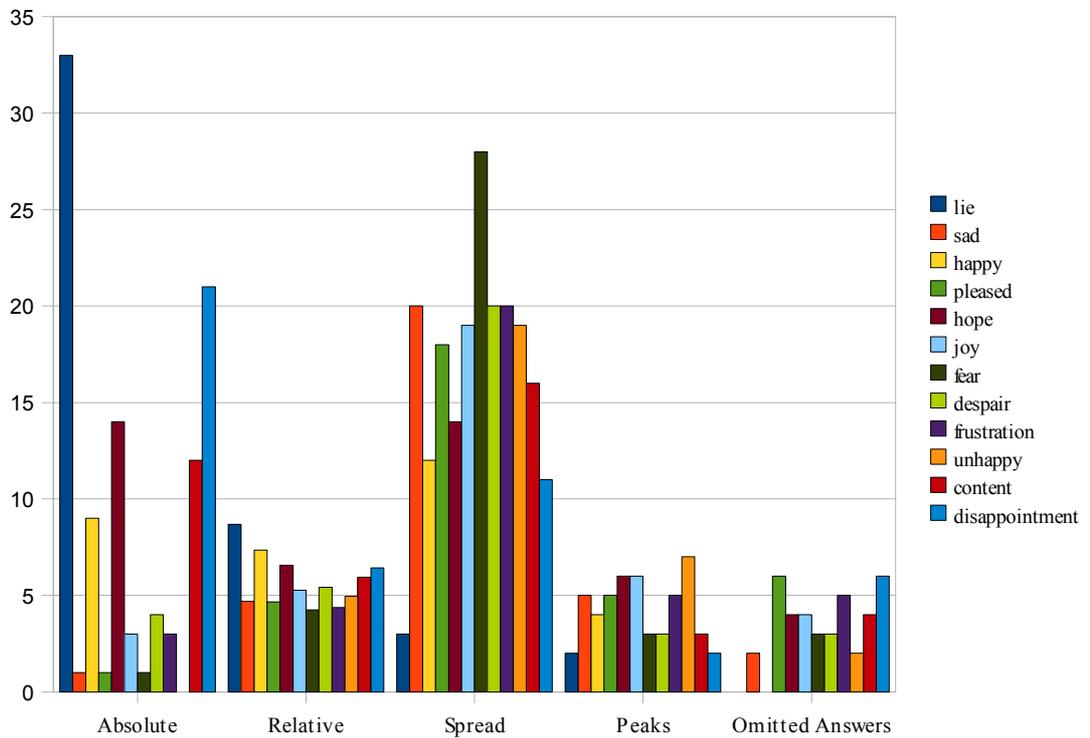


Figure C2: Explications Ordered by Parameters

Appendix D: Accuracy of the Explications

D1: Relative Score

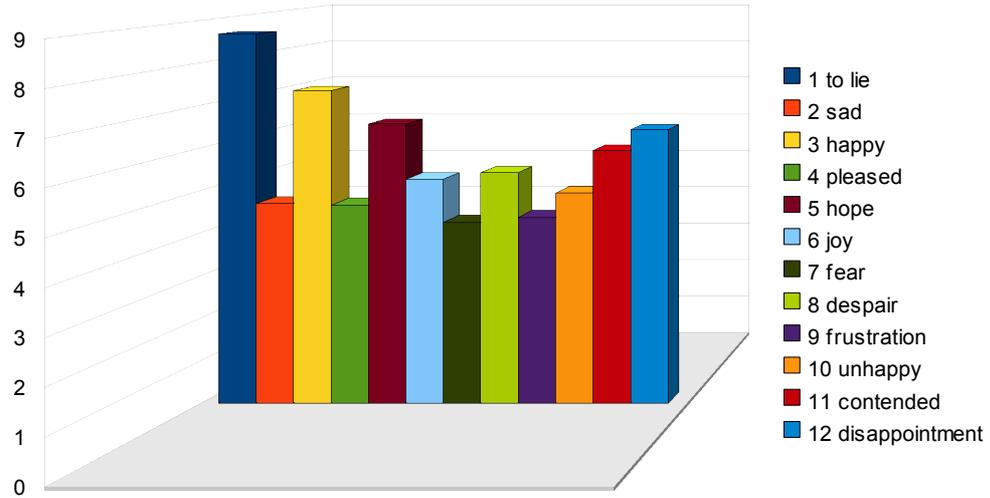


Figure D1: Relative Score for all Explications

D2: Frequency distribution

	value	Lie		sad		happy		pleased		hope		joy	
		Freq.	GF	Freq.	GF	Freq.	GF	Freq.	GF	Freq.	GF	Freq.	GF
Interval one	1-1.9	33		1		10		1		14		3	
	2-2.9	3		3		21		2		0		9	
	3-3.9	0	36	1	5	1	32	8	11	10	24	2	14
Interval two	4-4.9	0		7		1		4		5		7	
	5-5.9	1		15		2		13		2		8	
	6-6.9	1	2	6	28	1	4	2	19	1	8	0	15
Interval three	7-7.9	0		1		1		0		1		2	
	8-8.9	0		1		1		0		0		1	
	9-9.9	0		0		0		0		1		1	
	10	0	0	3	5	0	2	7	7	4	6	4	8

	value	fear		despair		frustration		unhappy		content		disappointment	
		Freq.	GF	Freq.	GF	Freq.	GF	Freq.	GF	Freq.	GF	Freq.	GF
Interval one	1-1.9	1		4		3		0		12		21	
	2-2.9	6		1		0		3		6		1	
	3-3.9	1	8	14	19	4	7	11	14	3	21	0	22
Interval two	4-4.9	2		5		11		6		2		5	
	5-5.9	8		5		6		9		6		3	
	6-6.9	10	20	2	12	4	21	3	18	2	10	1	9
Interval three	7-7.9	2		1		2		2		0		0	
	8-8.9	3		2		0		0		2		0	
	9-9.9	1		0		3		1		1		0	
	10	4	10	4	7	5	10	3	6	4	7	7	7

Freq. = Frequency of the value, which results from the ranking
 GF = Grouped Frequency

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