When Language Is Limited

Non-Native Speaker Comprehension

In Natural Conversation with Native Polish Speakers

A Qualitative Case Study

by Sigrid H. Watkins

MA IN APPLIED LINGUISTICS (TEFL)

2009

When Language Is Limited

Non-Native Speaker Comprehension

In Natural Conversation with Native Polish Speakers

A Qualitative Case Study

by Sigrid H. Watkins

submitted in partial fulfilment of the requirements for the degree of MA in

Applied Linguistics (TEFL), University of Bedfordshire

October 2009

ACKNOWLEDGEMENTS

I wish to thank all those individuals who have contributed to this study by providing practical and moral support.

My particular thanks go to my two Polish friends who agreed to engage in some very enjoyable Polish conversations with me; my supervisor, Vladimir Zegarac; and my translator, Alicja Wydmuch.

When Language Is Limited:

<u>Non-Native Speaker Comprehension</u>
<u>In Natural Conversation with Native Polish Speakers</u>

<u>A Qualitative Case Study</u>

ABSTRACT

This dissertation is a qualitative case study investigating the actual comprehension (as opposed to perceived or assumed comprehension) which an adult non-native speaker of Polish can achieve in a natural conversation with an adult native speaker of Polish. In this study, the researcher observed her own comprehension of the Polish language, with the help of retrospective data (stimulated recall) based on video recordings, as well as diary notes and translation.

The study investigates the following: whether an early non-native speaker can achieve comprehension of NS speech in natural, adult conversation; the level of comprehension that can be achieved in such a situation; the main factors that contribute to such comprehension (termed "comprehension factors"); and the role and importance of these factors in the comprehension process.

These issues were addressed by identifying, counting and analysing a) the instances of actual comprehension (as distinct from instances of misunderstanding and non-comprehension); b) the factors within these instances which were perceived to, or, based on the literature, could be expected to, aid comprehension; and c) the circumstances in which these same factors resulted in misunderstanding or non-comprehension.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

AC	Actual comprehension
CA	Communicative act
CF	Comprehension factor(s)
IR	Immediate recall
L2	Second language
MU	Misunderstanding
NC	Non-comprehension
NNS	Non-native speaker
NNS-IR	NNS immediate recall
NNS-SR	NNS stimulated recall
NS	Native speaker
NS-IR	NS immediate recall
NS-SR	NS stimulated recall
PC	Perceived comprehension
PR	NNS production
SLA	Second language acquisition
SR	Stimulated recall
TL	Target language

(For abbreviations of the comprehension factors see table 2.)

GLOSSARY

Actual comprehension (AC)	Instances of perceived comprehension where the comprehended message (as perceived by the NNS) consists only of ideas also contained in the intended message (as evidenced by the translation).
Communication	The sharing of messages (Sperber and Wilson, 1986).
Communicative act (CA)	A sequence of one or more utterances by the same or different speakers within one conversation, conveying one message as a group.
Comprehension	The decoding of messages or of intended meaning.
Comprehension factors (CF)	Cues and strategies that are used by, or available to, the non-native speaker for interpreting the meaning of native speaker speech.
Incomplete comprehension	Instances of perceived comprehension where some of the ideas of the intended message are missing in the comprehended message.
Misunderstanding (MU)	Instances of perceived comprehension where the comprehended message contains ideas which do not match the ideas in the intended message.
Native speaker (NS)	A speaker "for whom the language of communication is […] the mother tongue" (Long, 1983, p. 139).
Negotiation of meaning	A process of cooperation (Thomson, 1993) by which the interlocutors jointly tackle communication problems that result from the non-native speaker's insufficient second language resources (Ellis, 1985).
Non-attention	Occasions when the non-native speaker does not appear to pay attention to the non-native speaker's speech.
Non-comprehension (NC)	Instances where the non-native speaker cannot perceive a message at all in the native speaker's speech, even if individual words were understood.
Non-native speaker (NNS)	A speaker "for whom the language of communication […] is not the mother tongue" (Long, 1983, p. 139).
Non-native speaker production	Second language speech produced by the non-native speaker.
Perceived comprehension (PC)	Those parts of the conversation in which the non-native speaker was able to perceive a message in the native speaker's speech at the time of the conversation.

1. INTRODUCTION

This dissertation is a qualitative case study investigating non-native speaker (NNS) comprehension of native speaker (NS) speech in natural adult conversation. It is carried out through self-observation of the researcher's own comprehension of the Polish language, using retrospective data (stimulated recall), diary notes and translation.[1]

"NNS comprehension" is a term used in different ways. Here it will be taken to mean the NNS's comprehension of NS speech, excluding both the NS's comprehension of NNS speech and the NNS's comprehension of NNS speech.

The questions this study seeks to answer are as follows:

1) Can an early NNS achieve comprehension of NS speech in natural, adult conversation?
2) If so,
    a) what level of comprehension can be achieved in such a situation?
    b) what are some of the main factors that contribute to such comprehension?
    c) what is the role and importance of these factors in the comprehension process?

The terms "native/non-native speaker" refer to "speakers for whom the language of communication is/is not the mother tongue" (Long, 1983, p. 139).

Our focus will be on the "early" non-native speaker, that is, one who has begun to learn the second language (L2) very recently. The NNS's language level will be described in more detail in a later section.

Throughout this study, both NS and NNS will be referred to as "she", simply to avoid the more cumbersome "he/she", and to reflect the fact that in this particular study, all the participants are female. To protect the identity of the participants and their relatives, pseudonyms are used both in the conversations and in the appendix.

Comprehension is just one aspect of communication, which, based on the general relevance theoretic perspective on communication (Sperber and Wilson, 1986) can be defined as "the

---

[1] In view of the nature and scope of the research, it was necessary to slightly exceed the word limit. This was done in agreement with my supervisor.

sharing of messages". Webster's New World College Dictionary (2005) defines comprehension as a) "the act of grasping with the mind" and b) "understanding or knowledge that results from this". It is the former that will be addressed here.

Both in first and second language communication, we rely not only on language, but also on many non-linguistic features such as gestures, facial expressions, tone of voice and context, to communicate (Thompson, 2003). St. Francis of Assisi put it aptly when he advised his monks to "always preach the Gospel – if necessary use words". As our study aims to discover how comprehension – and thereby communication – is achieved where language is limited, non-linguistic factors and context can be expected to play a role.

The answer to the first question, whether an early NNS can achieve comprehension of NS speech in natural, adult conversation, is not as obvious as it may at first seem. Of course, many early non-native speakers in this situation are quite obviously able to communicate. However, the fact that a NNS *feels* she understands the NS, or that the NS *assumes* she has been understood, does not necessarily mean comprehension has actually taken place, and the interlocutors do not normally have the opportunity to check.

It is therefore question, , of how to define and measure comprehension: 1) How much of the message must be "grasped" for comprehension to have taken place? 2) Is it possible to measure objectively if the message intended by the NS was the one comprehended by the NNS? These two core questions are addressed in this study.

The dilemma with answering the latter in particular is that on the one hand, the early NNS's limited L2 knowledge does not allow her to check what the intended message was, but on the other hand, an outsider who does speak the language can only make guesses about what the NNS actually understood. As we will see, the assumptions underlying such guesses are not always reliable - one reason why, unlike many of the existing studies on NS/NNS conversation, this study uses self-observation combined with translation.

This approach will allow us to investigate what I have termed "actual comprehension", as distinct from a) what the NNS perceives to have understood, but which may or may not correspond to the intended message ("perceived comprehension"), and b) what the NS or an outsider assumes to have been understood based on the NNS's responses and reactions, and on a knowledge of the NNS's existing vocabulary.

Once comprehension has been defined and measured, and we have established whether it occurs in conversation, I will investigate the level of comprehension that can be achieved, the factors that make comprehension possible, and their respective role and importance in the comprehension process.

The study will be structured as follows:

In section 2 I will review the literature, discussing its relevance and where it is lacking as regards my study. Section 3 describes the research procedure, explaining what is being studied and why, the expected findings, and the methodology used for data collection and analysis, together with its justifications, challenges and changes. Section 4 is a description of the findings in answer to the research questions. In section 5, these are summarized and discussed, and suggestions made how to test their reliability through further research. The main conclusions and suggestions for further research are outlined in section 6.

2. LITERATURE REVIEW

The relevant literature reviewed for this study includes not only research on NS/NNS conversation, but also draws on findings about communication between native speakers and insights from the realm of language acquisition and teaching.

Before these are reviewed, however, some of the perspectives on comprehension found in the literature will be considered.

2.1. What is comprehension?

The literature refers to different levels and frameworks of comprehension:
Krashen (1985; cited in Gass and Selinker, 2001) makes a simple distinction between comprehensible and incomprehensible input. Gass and Selinker (2001), however point out that comprehension takes place at different levels, ranging from the basic semantic level to a structural understanding of the language. Ondarra's (1997) classification is more detailed still. It comprises a perceptive level (recognition of the words and the utterance structure), a semantic (speech interpretation) level, and a pragmatic level which involves working out the utterance's illocutionary force. These all interact with each other.

According to Ondarra (1997), Thompson (2003), and Bateson (1972; cited in Thompson, 2003, p.10) among others, interpreting meaning means discovering the literal (semantic or basic) meaning and the pragmatic (intended) meaning. This distinction is important, because it is possible to understand the words (literal meaning) but not the message (intended meaning) and vice versa. This study seeks to investigate the latter. Accordingly, we can re-define comprehension as "the decoding of messages or of intended meaning".

To investigate comprehension, we also need to consider that meaning has a subjective, i.e. interpretation or listener component and an objective, i.e. intention or speaker component (Thompson, 2003). What a listener perceives to have understood may not match the speaker's intended meaning. The extent to which these two match defines different degrees of comprehension. According to Faerch, Haastrup and Phillipson (1984), these range from non-comprehension and misunderstanding, via incomplete comprehension, to complete comprehension. The latter may be delayed or immediate.

Gass and Varonis (1991; cited in Ellis, 1994, p.260) classify the degrees of comprehension in a similar way, but label the stages differently, to include "non-engagement" (where no communication takes place, for example because the NNS avoids talking to the NS); "mis-communication", where the wrong message is understood (this is what we have termed misunderstanding); "mis-understanding" where communication problems are not repaired and the interlocutors fall silent (which I will call non-comprehension) and incomplete understanding, where repair is attempted.

"Repair" is a process where the interlocutors attempt to resolve communication problems which may occur. It is part of a process of cooperation labeled "negotiation of meaning" (Thomson, 1993), by which the interlocutors jointly tackle communication problems resulting from the NNS's insufficient L2 resources (Ellis, 1985). Comprehension thus involves grasping the basic idea of what is being said, and if this proves impossible, to negotiate it, i.e. work it out in cooperation, until it is clear (Thomson, 1993). The interlocutors do this by using both linguistic and non-linguistic strategies. The so-called input and interaction studies have focused mainly on the former, whereas other strands of the literature cover both types of strategy.

My own model of comprehension is described and defined in detail in section 3.3.2. b). For now I will simply say that this study seeks to investigate actual comprehension as opposed to comprehension which is perceived (by the NNS) or assumed (by an observer) and that it is at the *end* of the negotiation process that we can judge where the NNS finds herself on the continuum between non-comprehension and comprehension.

2.2. Overview of the relevant literature

2.2.1. Literature on NS/NNS conversation

Since the 1970s, there has been considerable interest in adult NS/NNS conversation. With regard to comprehension, the literature in this topic area has two main strands (Salazar, undated): sources focusing on comprehension for its own sake, and sources investigating NS/NNS conversation in the context of second language acquisition (SLA). The former, which will be the focus of this study, divides further into Simplified Register or Foreigner Talk studies and Input and Interaction studies.

a) Studies of Simplified Registers and Foreigner Talk

In the 1970s and '80s, a number of researchers, e.g. Ferguson (1971; cited in Gass and Selinker, 2001, p.260), Ferguson and Debose (1977; cited in Ellis, 1985, p.133), Freed (1980, 1981; cited in Ellis, 1994, p.251), Hatch (1983b; cited in Gass and Madden,1985, p. 4) and others, undertook to describe how native speakers adjust their speech when addressing non-native speakers. These studies point out how what was termed "foreigner talk" (Ferguson, 1971; cited in Gass and Selinker, 2001, p.260) or "simplified registers" (Ferguson and Debose, 1977; cited in Ellis, 1985, p.133), differs from conversation between native speakers in that it contains certain input features, e.g. more content words, more repetition, more concrete topics etc.

As the name "foreigner talk" suggests, the findings of these studies concentrate mainly on linguistic comprehension aids that are described in comparative terms. They include simplified grammar, pronunciation and vocabulary (Ferguson, 1971; cited in Gass and Selinker, 2001, p.260), such as shorter and syntactically simpler utterances. Native Speakers may also speak more slowly, loudly and clearly, use more gestures, longer pauses, common vocabulary and paraphrases, and avoid idiomatic expressions. They tend to simplify not only the form, but also the content of what is said, and repeat themselves more often (Hatch, 1983b; cited in Gass and Madden, 1985, p. 4 and Park, undated). Ellis (1994) adds that foreigner talk not only simplifies, but also elaborates and regularizes the language, making it easier for the NNS to process it.

b) Input and Interaction studies

Following Krashen's (1980; cited in Gass and Madden, 1985, p.5) "Input Hypothesis" in which he proposed the notion of "comprehensible input" (CI), foreigner talk moved on from mere descriptions of its features to a detailed analysis of how these may help make input comprehensible.

Many researchers were keen to add more detail to the features already described, and also identified additional features such as increased use of questions and avoidance of false starts (Larsen-Freeman, 1985), or increased redundancy (Pica, Doughty and Young, 1986; cited in Salazar, undated, p.2).

At the same time, others (e.g. Long, 1980; cited in Gass and Madden, 1985, p.4; 1981; cited in Ellis, 1985, p.133; and 1983; cited in Park, undated, "Review of the Literature", as well as Pica Doughty and Young, 1987; cited in Park, undated, "Review of the Literature", Loschky, 1994; cited in Salazar, undated, p.3, and others) pointed out that foreigner talk contains not only modified input, but also interactional features, while still others (e.g. Ellis, 1985, and Hatch, 1978; cited in Ellis, 1985, p.138, as well as Ondarra, 1997, and Brenner, Broeder, Roberts, Simonot and Vasseur, 1988; cited in Ondarra, 1997, p.91) maintained that NS speech should not be analysed in isolation, because comprehension is achieved in interaction between the interlocutors - hence the name "Interaction Studies".

Pica, Doughty and Young (1987; cited in Park, undated, "Review of the literature") distinguish two aspects of what makes input comprehensible: pre-modified input (termed "modified speech" by Long, 1982; cited in Park, undated, "Review of the Literature"), which covers the features described in the foreigner talk studies, and interactionally modified input, also called "modified interaction" or "interactional modification" (Long; 1982; cited in Park, undated, "Review of the Literature"). The latter consists of interactions between native and non-native speakers in which "both parties modify and restructure the interaction to arrive at mutual understanding" (Pica et al., 1987, p.739; cited in Park, undated, Review of the literature). Pica et al. (1986; cited in Salazar, undated, p.2) found that comprehension of a set of instructions was lower where the input was pre-modified (simpler syntax, as well as increased redundancy through repetitions and paraphrase) than where it was interactionally modified. Similarly, Gass and Varonis (1994; cited in Salazar, undated, p.4) observe that interaction results in negotiation of meaning, which in turn results in better NNS comprehension. However, Loschky (1994; cited in Salazar, undated, p.3) found that in a study in which learners performed listening and

identifying tasks, pre-modified input was no better of worse for comprehension than non-modified input with interaction.

Long (1983b; cited in Ellis, 1985, p.157-158), and Long (1982; cited in Park, undated, "Review of the Literature") lists modified interaction among other factors to aid comprehension, such as modified speech, existing linguistic knowledge, linguistic and extra-linguistic context, as well as a "here-and-now" focus of conversation. In the latter source, he claims that modified interaction is the most important factor for communication, as it is what allows the transition between non-comprehension and comprehension.

Interactional modification, which Long later termed "negotiation of meaning" (1982; cited in Park, "Review of the literature") has many features. The most frequently identified and cited include confirmation checks ("What do you mean?"), comprehension checks ("Do you understand?"), and clarification requests ("What?", "Pardon?") (Long, 1980; cited in Gass and Selinker, 2001, p. 274). (The questions given in brackets are intended to illustrate what is meant by these terms but are by no means the only ways these strategies can be performed. As we will see, a questioning look or repetition of the interlocutor's speech with question intonation can serve the same purpose.) Other features of modified interaction include repetition of self and of the interlocutor's speech (e.g. Long, 1983b; cited in Ellis, 1985, p. 157-158; Long, 1983a; cited in Ellis, 1985, p. 141-142; Hatch, 1983; cited in Gass and Madden, 1985, p.4; Ellis, 1994); clarification (Long, 1983b; cited in Ellis, 1985, p. 157-158); and prompting or guessing at the NNS's meaning, whereby the NS models what she guesses the NNS is trying to say (e.g. Long, 1983b; cited in Ellis, 1985, p. 157-158; Hatch 1978; cited in Ellis, 1985, p.141; Thomson, 1993; Pica, 1988; cited in Park, undated,, "Review of the Literature") Other features deal with the selection and treatment of topics, e.g. use of a smaller range of topics, mainly with a here-and-now focus, which are treated simply and briefly and introduced mostly by questions (Larsen-Freeman, 1985; Ellis, 1994; Schmidt and Nagem Frota, 1986); pausing or placing stress before a new topic is introduced (Larsen-Freeman, 1985), or moving topics to the beginning or end of utterances to make them more salient (Ellis, 1985; Hatch 1978; cited in Ellis, 1985, p.141; Long, 1983a; cited in Ellis, 1985, p. 141-142). Schmidt and Nagem Frota (1986) also observe that in conversation with early L2 speakers, the NS mostly controls the topic, although this control can be voluntarily relinquished (Long, 1983a; cited in Ellis, 1985, p. 141-142, and Ellis, 1994) to keep the conversation going.

Unfortunately, the intensive focus on comprehensible input reviewed above has resulted in the literature giving the somewhat unbalanced and simplistic impression that comprehension is

essentially a one-way process whereby the (linguistic) modifications the NS makes to input and interaction necessarily increase the NNS's comprehension.

This view is problematic on a number of counts:

Firstly, it does not give consideration to the NNS's role in achieving comprehension. Indeed, although the interaction literature, unlike many of the input studies, by definition recognizes the importance of interaction in comprehension, the main emphasis in much of that literature remains on the NS's contribution to making input comprehensible (Ondarra, 1997). Many of the interactional modifications are described from the NS's point of view, maybe because they developed from foreigner talk studies which were interested mainly in the NS perspective from a purely descriptive point of view. Yet it has been pointed out that both foreigner talk and interactional modifications are produced in response to the NNS's feedback (Hatch, 1983a; cited in Ellis, 1985, p.137; Hawkins, 1985; Gass and Selinker, 2001). My study is concerned with the NNS perspective on what achieves comprehension. This does not mean the NS's contributions to comprehension will be excluded from analysis. What it does mean is that I hope to investigate which of the available clues, including interactional modifications, the NNS actually *uses* to work out meaning (see also Hawkins, 1985).

Secondly, it over-simplifies the process of interpreting meaning. Ondarra (1997) criticizes interaction studies, stating that "negotiation" is more complex than simply identifying whether certain speech devices (e.g. clarification requests, comprehension checks etc.) are present or absent. He adds that in their focus on indicators of non-comprehension, these studies also neglect the positive elements of negotiation of meaning, i.e. where comprehension does take place. In addition, many of the interaction studies look at how adjustments contribute to comprehensible input, but without giving consideration to the psycholinguistic processes involved in interpreting meaning (Faerch and Kasper, 1986; cited in Ondarra, 1997, p.33).

This latter point was also noted by Hawkins (1985; cited in Park, undated, "Introduction"), who observed that we can't assume that input features necessarily aid comprehension just because they are there: we must find out how the NNS uses them in order to establish what facilitates comprehension. (Long, 1985) similarly noted that it was not clear which of the adjustments made to a lecturette helped comprehension.) However, Hawkins (1985) further states that comprehension is difficult to determine: it is necessary to find out exactly *what* has been understood before one can say how foreigner talk helps comprehension; yet, as her study (Hawkins, 1985) shows, the commonly used criterion of "appropriate response" is inadequate

for determining what has been understood. This is where self-observation has a great advantage, as will be discussed later.

Thirdly, the intense focus of the literature on comprehensible input overemphasises linguistic factors in comprehension, whilst neglecting non-linguistic aspects (Ondarra, 1997). This is despite the fact that Krashen (1985) clearly states in his Input Hypothesis that input is made comprehensible by existing linguistic knowledge and so-called "extra-linguistic information" (non-verbal communication and context). Also, Long (1982; cited in Park, "Review of the literature") lists "context" as one of the factors that makes input comprehensible.

Unfortunately, the bulk of the literature on NS/NNS conversation to date seems to fall into the categories of Foreigner Talk, Input, and Interaction studies, which have devoted very little attention to the details of non-verbal communication and context and how these help comprehension. This study hopes to contribute to redressing this balance.)

One very useful study, however, previously cited on a few occasions, was found which provides a more comprehensive view on the process of negotiation of meaning:

c) Other Negotiation of Meaning studies

Ondarra's (1997) longitudinal examination of the effects of input, interaction and output on SLA distinguishes itself from the above type of studies in four main ways: a) It takes longitudinal, qualitative rather than cross-sectional, quantitative approach; b) It considers input, interaction and output together, rather than separately; c) It examines non-native speakers of a language other than English (Dutch learners of Spanish); and d) Most importantly for our study, it provides a balanced view on how comprehension is achieved, which is not limited to linguistic, NS-controlled elements of comprehension. In this study, Ondarra (1997) draws extensively on literature about pragmatics and communication between native speakers, citing authors such as Blakemore (1992), Levinson (1983) and Gumperz (1982), as well as Grice's (1975; cited in Richards and Schmidt, 1983, p. 45) conversational maxims. The author arrives at a detailed picture of what aids comprehension. This includes 1) context (including the setting, the social relationship and roles of the interlocutors, and the co-text, i.e. the speech that has gone before); 2) background knowledge; 3) conversational principles such as politeness, relevance and the cooperative principle; 4) paralinguistic context (gestures and prosodic cues), and 5) conversational purpose. Ondarra further states that to solve interpretation problems, the listener uses contextualization cues, and if these don't help, repair strategies are used. he also points out

that even though non-verbal elements are very important for communication when the NNS is not proficient, these have not been given due attention in interaction studies and need to be researched more.

As comprehension problems are similar in L1 and L2 (Ondarra,1997) and "negotiating meaning is […] central to human communication" (Ondarra,1997, p. 113), the literature on communication between native speakers has been considered.

2.2.2.   Literature on communication between native speakers

This literature recognizes that although language plays a crucial part, communication is more than just language (Thompson, 2003). Regarding comprehension, Levinson (1983; cited in Ondarra, 1997) states that "understanding an utterance involves […] the making of inferences that will connect what is said to what is mutually assumed" (p.50), which shows that the linguistic element is only part of the equation. It is this connection that allows meaning to be interpreted through negotiation between the interlocutors (Scollon and Scollon, 2001; cited in Thompson, 2003, p.88; Gumperz, 1982; cited in Ondarra, 1997, p.52), during which the speaker adjusts her speech to the listener through ongoing feedback (Thompson, 2003). Meaning is thus not fixed, but is " 'emergent' through the process of interaction" (Thompson, 2003, p.89): Its interpretation changes as the conversation progresses (Gumperz, 1982; cited in Ondarra, 1997, p.52).

Unlike the literature reviewed so far (with the exception of Ondarra, 1997), the pragmatics literature goes into great detail concerning what Krashen (1985) termed "extra-linguistic information", and its contribution to comprehension. This is not surprising: By definition, in studies on conversation between native speakers, the focus is turned away from the language itself, as this is mostly shared, and towards other factors that help (or hinder) the interlocutors in interpreting each other's meaning. Two such factors are context and paralinguistic features, which include non-verbal communication.

Like Ondarra (1997) and Gumperz (1982; cited in Ondarra, 1997, p.52), Thompson (2003) highlights that context is crucial to interpreting meaning in two ways: Firstly, it helps sort out the ambiguity of language where one word expresses many ideas and vice versa, because the contextual cues that surround a word determine its meaning in a specific instance. Secondly, it helps to interpret meaning when linguistic resources are limited or non-existent, as is the case in this study.

As Richards and Schmidt (1983) explain: we bring expectations about the nature of each other's contributions which allow us to interpret the contributions. These expectations are based on Grice's (1975; cited in Fraser, 1983, p.45) conversational maxims of quantity, quality, relevance and manner.

It is the expectations which a listener derives from the context that allow her to draw together both linguistic and non-linguistic cues to interpret the meaning of what is being said.

The second important factor in interpreting meaning are paralinguistic features: speed, loudness, tone of voice, as well as prosodic features such as intonation and pitch, and non-verbal communication such as gestures, actions and gazes (Thompson, 2003). Again, in a scenario where language is limited, these features can be expected to be important in working out the meaning of what is said.

Given that language learners constantly face the challenge of having to extract meaning from unfamiliar language items, the literature on language learning and teaching will also be examined, to see if it takes up some of the claims of the literature reviewed so far: the importance of interaction, and how the NNS might combine clues based on context, non-verbal communication and existing linguistic knowledge to interpret meaning.

2.2.3. Literature on language acquisition and teaching

Thomson (1993) provides instructions for self-taught foreign language learners, such as missionaries, who have to familiarise themselves with a language quickly through natural interaction with a native speaker who is not necessarily a teacher. Assuming a non-specialised audience, the author provides the following tips and insights about what aids comprehension in such a scenario, which is similar to the situation of this study:

Like the input and interaction studies discussed above, Thomson (1993) mentions modified input and interaction such as simplified, slower, and clear speech, and prompting of the NNS, as well as cooperatively negotiating meaning by guessing at and adjusting to each other's level of comprehension. He also suggests memorizing set phrases that act as so-called "power tools", as they facilitate acquisition of more language (e.g. "How do you say…", "What's this?", "Please repeat…", "Can you say this more slowly…" etc.) (Thomson, 1993, section 3). While many of

these are important mainly for NNS production, some also prompt input and interactional modifications, thus potentially increasing comprehension.

However, the author also draws attention to the importance of non-verbal communication, suggesting that this is what allows a learner to begin the process of understanding meaning before any of the language is known, for example because the NS points to objects whilst naming them. In this sense, non-verbal communication acts as a type of context: it "narrows down the possibilities" of the meaning of a word by providing a physical (i.e. non-linguistic) context through what is seen or what happens while the learner hears the word (Thomson, 1993, "section 2.3"). Consequently, Thomson (1993) recommends the use of Asher's (1972; cited in Krashen, 1998) "total physical response", supplemented by objects, pictures, drawings and role-play (also mentioned by Nation, 2001), to make input comprehensible.

Thomson (1993) adds that the notion of context extends beyond the physical context to include the use of familiar stories, predictable routines and the NNS's own experience as comprehension aids. Similarly, Gass and Selinker (2001) state that such "shared knowledge" and the expectations based on it aid mutual comprehension. They explain that shared knowledge can refer to language, the interlocutors' social background, and cultural knowledge. The latter is what Faerch et al. (1984) refer to as "situational cues" (p.149-150), i.e. cues based on knowledge about what a person normally does in a particular situation.

Faerch et al. (1984), in their treatment of the processes of speech reception, provide further detail on the context cues available to non-native speakers: Conversationalists may need to decode an incomplete message based on just a few low-level, lexical units. This occurs, as in Faerch et al's (1984) study, when a NS tries to interpret a learner's deficient production, or, as in our study, when a NNS who has limited comprehension of the language tries to decode NS speech. According to Faerch et al. (1984), in such situations decoding is possible through top-down processing, i.e. working backwards from the message to utterance and word meaning. This is done by using discourse cues (where one particular discourse move entails the expectation of another), textual cues (the expectation that the utterance will relate to the conversation topic) and situational cues (discussed above).

Discourse and textual cues could be described as "linguistic context", and situational and social background cues as "non-linguistic context".

Cook (2001) also recognizes that situation and context provide important meaning clues, and adds that further clues can be derived from "deductions from the word form", or by "linking to

19

cognates" (similar-sounding words of other familiar languages) (p. 72). Similarly, Carton (1971; cited in Faerch et al., 1984, p. 96 and 97), lists interlingual meaning cues that are based on the L1 and other languages, and intralingual meaning cues (based on existing target language knowledge) in addition to contextual cues. Gass and Selinker (2001) additionally include language universals and meta-linguistic awareness, and claim that all such "prior linguistic knowledge "forms the basis for comprehension", as "comprehension cannot take place in a vacuum" (p. 406). Interestingly, this seems to contradict Thomson's (1993) view that non-verbal communication enables a NNS to understand ideas *without* knowing any of the language.

All the meaning cues discussed above form part of a well-known process the language teaching literature refers to as "inferencing", whereby initial hypotheses about the interlocutor's intended meaning are subsequently tested as the conversation progresses (Rost, 1990; cited in Ross, 1997, p. 216). It is this type of NNS-based process that this study investigates.

Interestingly, the literature on NS/NNS conversation reviewed above rarely mentions this type of inferencing and focuses almost entirely on the NS's behaviour. One exception is the work of Faerch et al. (1984), which groups "inferencing" and "interactional strategies" together under the label "reception strategies" (p. 162). The authors explain that interactional strategies involve conversational repair in situations when inferencing is impossible or unsuccessful (Faerch et al., 1984).

Although Faerch et al. (1984) label both productive and receptive strategies as "communication strategies", on the whole the literature on Communication Strategies focuses exclusively on NNS production and is therefore not relevant. My study will investigate production purely in terms of its contribution to *comprehension*.

To avoid confusion, the term "comprehension factors" (CF) will be used instead of the term "strategies", to refer generally to the various factors that facilitate comprehension. The term "factors" has the advantage of including both conscious and unconscious contributors to comprehension. However, "strategies" is commonly used to describe features of modified input and interaction. I will therefore occasionally use this term when referring specifically to such features.

The above literature, as well as my own intuition and experience, formed the basis of the list of comprehension factors found in appendix 1.

2.3. Relevance and shortcomings of the existing literature

The following section discusses how the existing literature has been used to address the issues of the proposed study, and where the literature is lacking.

My starting point was Krashen's (1985) idea that existing linguistic knowledge, extra-linguistic information and context are what make input comprehensible. Gass and Selinker (2001), Cook (2001) and Carton (1971; cited in Faerch et al., 1984, p. 96 and 97) clarified the components of existing linguistic knowledge as knowledge of L2, L1 and other languages, while Thompson (2003), Ondarra (1997), Faerch et al. (1984), Thomson (1993), and others helped define extra-linguistic information and context as a) non-verbal communication, including paralinguistic features, b) linguistic context cues (textual and discourse) and c) non-linguistic context cues based on shared knowledge of the world, social and cultural background and knowledge of the immediate context of the conversation. Interactional modifications were to form a "second layer" of investigation, to see if and how the features described in the interaction studies further contribute to the comprehension process facilitated by linguistic and extra-linguistic information.

This study investigates NNS comprehension for communication. My focus on the NNS's role does not mean that the NS's contribution to comprehension will be excluded from the analysis; it does mean that I will investigate which of the available meaning cues are actually used by the NNS, as opposed to simply provided by the NS. However, as we have seen, few of the existing NS/NNS conversation studies give consideration to the NNS's role in achieving comprehension. This may be partly due to the lack of a reliable measure of comprehension (Hawkins, 1985), which, it is hoped, will be remedied at least in part through the self-observation design of this study.

In addition, since the 1980s, the bulk of the NS/NNS literature has tended to focus on comprehension for second language acquisition, presumably triggered by Krashen's (1985) Input Hypothesis, making it difficult to find recent literature on comprehension per se. This shift is not necessarily justified: In our age of globalization, *learning* other languages is certainly important, yet it seems at least equally important to learn how to understand and *communicate* while our linguistic resources in one another's language are still limited. Also, the link between Comprehensible Input and SLA remains controversial, lacking empirical evidence (see for example Ellis, 1985, and Park, undated; also Ellis, 1991, and Pica, 1994, both cited in Salazar, undated, p.5; and Ellis, 1994).

Where the NNS perspective has been addressed, it has focused mainly on NNS production, not comprehension, with few exceptions such as Schmidt and Nagem-Frota (1986) and Faerch et al. (1984). This bias may be another indirect result of the focus on second language acquisition, given that many teachers are rightly concerned with helping their students express themselves, but this does not justify neglecting comprehension.

This study also draws attention to non-linguistic comprehension factors such as non-verbal communication and context which, although long recognized in pragmatics circles, have not generally been addressed in detail in the NS/NNS conversation literature.

The medium of investigation chosen for this study, natural conversation, proved to be unusual. As Ondarra,1997 and Ellis (1994), point out, most NS/NNS studies to date have used one-way, experimental comprehension tasks with scripted input. Another unusual feature is the choice of Polish as the language of conversation. It seems that there have been very few comprehension studies on non-English conversation, one exception being Schmidt and Nagem Frota (1986) which uses Portuguese. The limited use of self-observation may be linked to this: In studies investigating comprehension of non-native *English* speakers, self-observation is obviously not an option, as the researchers will be fluent or native, not non-native, English-speakers. This study will help redress the balance on all three counts by using self-observation in natural conversation with native Polish-speakers.

The above literature helped to shape my initial ideas into the research procedure described below.

3.   RESEARCH PROCEDURE

3.1. Purpose and research design

The purpose of this study is to investigate what it is that helps a NNS understand NS speech despite very limited knowledge of the language, and without any translation being available.

The motivation behind this topic is twofold:

Having learned several languages, including some by "immersion" (i.e. by simply being spoken to in the second language), and having watched my children "pick up" my German mother

tongue as a second language, it has always seemed a mystery how the step from non-comprehension to comprehension can be achieved without translation being provided. What is it that makes new language comprehensible when the conversation is conducted exclusively in the learner's L2?

As a language teacher, I also felt it would be useful to know what factors help students understand new language items, not only – as has been done in the past – with a view to adjusting my own linguistic input, but also in the hope of being in a position to draw the students' attention to, and encourage their use of, all the available cues (linguistic and otherwise) and help them understand more of the language more quickly. As I work mainly in adult education, I opted to investigate adult conversation.

Self-observation was chosen because it is both practical and allows a more direct observation of the factors that facilitate comprehension when language knowledge is very limited. This will be discussed in more detail in section 3.3. Self-observation ruled out conversations in English and in my German mother tongue, due to fluency in both languages.

As a new learner of Polish, I decided to investigate my own comprehension of native Polish speech in natural one-to-one conversation.

Much of the literature on NS/NNS conversation deals with classroom scenarios. However, I chose to focus on natural, everyday conversation as opposed to the classroom situation, because this was where I had personally observed the phenomenon of comprehension without translation or much prior language knowledge. Also, given that natural conversation is a common situation, in this day of international relationships it is important to learn – and become equipped to teach others – how to communicate in that situation when language is limited.

The one-to-one situation allows for a detailed, close observation of the negotiation of meaning process in a manageable way.

3.2. Expected findings

3.2.1. Researcher's expected findings

Because of the NNS's limited target language (TL) knowledge, my expectations were as follows:

- NNS comprehension is possible, but very limited, because it is assumed to depend largely on knowledge of the TL. Instances of misunderstanding and non-comprehension will outweigh instances of actual comprehension.
- The NNS will rely heavily on her knowledge of other languages, as well as non-verbal communication and context cues to try to understand NS speech.
- Existing TL knowledge will not play a major role in comprehension, because it is so limited.
- NNS production will be very limited and restrict itself to answering the NS's questions. The NNS will play a fairly passive role.
- As the NNS's production and comprehension is limited, the NS will dominate the conversation, and/or there will be a lot of embarrassed silence.
- Interactional modifications to negotiate meaning will not play a major role in comprehension, because it is assumed that knowledge of the language is necessary to perform interaction and negotiation.

3.2.2. Expected findings based on the literature

- According to the literature reviewed, the following factors are expected to contribute to comprehension: non-verbal communication, linguistic and non-linguistic context, existing linguistic knowledge, modified input and interaction, NNS production, certain paralinguistic features, and topic choice (see list of comprehension factors in appendix 1 for references).

- Gass and Selinker (2001) claim that comprehension is based on existing linguistic knowledge. If this is correct, most instances of actual comprehension should involve some form of existing linguistic knowledge.

- However, Thomson (1993) maintains that non-verbal communication facilitates comprehension *without* existing TL knowledge. This means that we might find instances where AC was achieved without reference to L2 knowledge.

- Long (1983b; cited in Ellis, 1985, p. 157-158) states that interaction is the most important factor for communication, as it is interaction that allows the NNS to make the transition from non-comprehension to comprehension (Long, 1982; cited in Park, undated, "Review of the Literature"). If so, interaction factors should occur in most instances of actual comprehension in our data.

- Based on the relative frequency of modified interaction features compared to non-verbal communication in the existing NS/NNS conversation literature, modified interaction is expected to account for a large part of NNS comprehension, whereas non-verbal communication is relatively unimportant.

- Ondarra (1997) states that the NS takes more of a lead in the conversation when the NNS is the "powerless" participant. We can conclude from this that the more powerful participant is likely to take the strongest lead in our conversations. The power distribution between our participants will be discussed in section 3.3.3.a).

- Topics will tend to be introduced by questions and initiated by the NS, leaving little room for NNS-initiated production. (Larsen-Freeman, 1985, Ellis, 1994 and Schmidt and Nagem Frota, 1986).

- Larsen-Freeman (1985), Ellis, (1994), and Schmidt and Nagem Frota (1986) all maintain that here-and-now topics are easier to understand. This should mean that conversation about past or future events or abstract concepts is either rare, or not readily understood when it does occur.

- Gass and Varonis (1984; cited in Ondarra, 1997, p.66) add that familiar topics aid comprehension. If so, the instances of actual comprehension in our data can be expected to treat predominantly familiar topics.

3.3. Methodology

3.3.1. Aspects of the literature that influenced my methodology

Self-observation

Hawkins' (1985) study shows that the indirect measure of comprehension which is based on whether NNS gives an appropriate response is not always accurate: The author found instances where an appropriate response was made without comprehension actually having occurred. Also, the NS's assumptions about the NNS'S comprehension are insufficient to establish exactly *what* was understood (Hawkins, 1985). Self-observation, by contrast, allows us to establish actual comprehension as opposed to assumed or perceived comprehension. Because the researcher is the NNS, we get a NNS's point of view which, especially if combined with retrospection data, reveals what the NNS was thinking at the time an utterance was made.

However, Schmidt and Nagem Frota (1986) highlight the importance of combining insider and outsider observation: They explain that although only the learner can really know what she was trying to say or what she thought she understood, sometimes the learner's perception of what she understood is wrong, and only the outsider (i.e. the recording and a translation) can reveal the truth.

Introspection/retrospection

Schmidt and Nagem Frota (1986) further point out that introspective or retrospective data has the advantage of providing a more accurate picture of exactly what input features learners notice. To test the accuracy of the "appropriate response" measure, Hawkins (1985) uses a retrospective technique known as "stimulated recall", whereby the subjects comment on what they were thinking at the time of the dialogue as the dialogue is played back to them. I felt that this technique could be used very effectively to obtain an accurate picture of what was understood and the factors that helped comprehension, especially if a video recording is used when collecting the retrospective comments. The video has the dual purpose of making the retrospection data even richer, and of allowing non-linguistic comprehension factors to be included in the research. This approach can be usefully triangulated with diary notes (Schmidt and Frota, 1986) about what was understood.

However, as Ellis (1994) points out, retrospection data is not often used, because it is not easy for NS or NNS to analyse the input correctly in a detailed way. Here again the advantage of a self-observation design is that the NNS-researcher possesses both the inside view and the theoretical knowledge. The disadvantage is that the NNS-researcher already knows what she is looking for, so that the analysis may be tainted.

Qualitative data

Ondarra (1997) observes that negotiation of meaning is a complex process of interaction which goes beyond indications of non-comprehension, and that to analyse it, a qualitative approach is necessary.

Natural conversation

Hawkins (1985) uses communication tasks specifically set up to investigate comprehension with the aim of creating balanced communicative needs. Such designs have the advantage of making it possible to create a communicative need which pushes the participants to work hard at their communication. However, there are disadvantages: Specifically set up tasks, by definition, do not allow us to investigate "natural" communication; also, if used in self-observation, such designs may pose a validity threat as the NNS-researcher will know the task in advance. Therefore it was decided to use natural conversation, because although the conversation is set up for the research purpose, its content is not.

The main inspiration for my research design came from Thomson's (1993) idea that missionaries can use natural conversation in order to learn a new language for use in the field. Because learners in this situation often have to resort to self-tuition without access to formal teaching and resources, he proposes that the learner recruit a native speaker who also speaks the learner's native language and who is willing to regularly spend half an hour at a time conversing about any topic in the TL, using photos and pictures to support meaning, but never the learner's L1. He suggests jotting down things both conversationalists struggled to express. This idea, together with Schmidt and Nagem Frota's (1986) suggestion to use diary notes, provided the inspiration to conduct a natural conversation followed by notes about what the conversationalists tried to say and thought they understood. The advantage of using a NS who shares the native language of the NNS-researcher, is that the researcher can find out afterwards

what the NS actually said, and compare this with what she thought she understood. Because this allows identification of "actual comprehension" which is crucial to our research, it offsets the disadvantage that the situation is slightly "artificial" because the participants choose to restrict themselves to Polish when they could speak English to each other. Thomson's (1993) idea of using drawings to help communication was also taken up and a pen and paper provided for this purpose.

Research questions

Finally, the question whether an early NNS is able to understand NS speech in natural conversation is based on Schmidt and Nagem Frota (1986), who ask what and how much language has to be learned to be able to communicate. The underlying assumption of their question is that there may be a minimum L2 level below which it is *not* possible to communicate. I felt it would be interesting to discover whether my own "limited knowledge" was below that level.

3.3.2. Procedure

The following section describes the steps (highlighted in bold) which were involved in collecting and analysing the data, and provides details about each step.

a) Data collection

For this study, 4 one-to-one Polish conversations of 25 minutes each were conducted between the NNS-researcher and two different native Polish speakers (2 conversations per NS). The conversations took place at the researcher's home on 4 different days over two weeks at the beginning and the end of January 2009. Each conversation was recorded simultaneously on both audio and video[2], using a digital camera and an I-pod recording device.

---

[2] To protect the participants' identity, their own names and those of friends and relatives mentioned have been changed. For the same reason, the video recordings could not be included in the appendix. These can be obtained, together with a key to the pseudonyms, by express permission against a guarantee that the data will not be disseminated, will be viewed for examination purposes only, and subsequently returned to the researcher with no copies being retained.

The following paragraphs provide a more detailed description of the conversations and their participants according to the guidelines put forward in Long (1983a), Hawkins (1985) and Gass and Selinker (2001).

The conversations can be described as "natural" in the sense that, although they were scheduled to take place for the research and a list of suggested topics was available to the NS in case she could not think of what to say, the conversation details were not planned and the native speakers were free to choose and change the conversation topics as they pleased.

Both the setting and the relationship between the participants were informal:

All the conversations were conducted in the kitchen of the researcher's home, whilst eating lunch at the dinner table. On the wall near the table were photographs of the researcher's family. As we will see, both the familiarity and informality of the setting, and the setting itself (the food, the furniture and the photographs) helped communication and comprehension by providing not only conversation topics, but also some of the illustrations to convey meaning.

The NNS-researcher is a female postgraduate student of linguistics and trainee language teacher, in her late thirties. She is married with two children and lives in Britain. A native German and near-native English speaker, she has trained as a translator and also speaks a number of other languages. The NNS had just begun to learn Polish in the year before this study, completing the first eight lessons of the Pimsleur (2004) method for Polish and studying the dialogues and vocabulary lists only from the first five lessons of a Langenscheidt Polish course for German speakers (Adamczyk, 1995). Both courses are audio-based self-study programmes. Some very basic grammar points were learned communicatively through the phrases covered in the Pimsleur method. By the time of the data collection the present tense was the only tense encountered, and the NNS had not yet received any instruction in Polish spelling. After a few weeks, active learning of Polish was discontinued due to lack of time. However, some Polish phrases were practised for about 5 minutes weekly for another month or two with one of the native speakers who participated in the study. This description is based on the NNS's level of Polish at the time the data collection was begun. It should be remembered that this level increased during the course of the research, as the comprehension factors and negotiation processes helped the NNS gradually acquire new language. The NNS's Polish vocabulary is highlighted in the transcript (appendix 3) as follows: dark blue for existing receptive vocabulary; black bold

for existing productive vocabulary; teal for new words acquired in the course of the conversation.

The NNS is a keen communicator, but is not good at tolerating silence and has had little experience communicating in situations where she does not know the language of the conversation.

In terms of existing linguistic knowledge, the NNS-researcher benefits from all the elements identified by Gass and Selinker (2001): apart from existing TL knowledge, she has good metalinguistic awareness, having learned a number of languages. This also means she can draw on these languages to guess the possible meaning of Polish words, which may, of course, affect the generalisability of the results. However, it remains to be seen how important the "knowledge of other languages" actually is as a comprehension factor; it is at least possible that it hinders comprehension as well as helping it. Furthermore, in a research design based on self-observation, this drawback has to be accepted, and is offset by the benefits of self-observation highlighted above.

Both native speakers are female, in their mid-to-late twenties, and about to get married. Both are keen and able communicators like the researcher, very willing participants who are interested in the research. This means that as many variables as possible were kept constant, facilitating a fair comparison.

There are however some differences: although both are fairly close friends of the researcher, she has known Zosia for just under 1 year, Anna for about 3 years. Zosia had been to the researcher's home once before, whereas Anna has visited many times. Zosia is a postgraduate study colleague and fellow linguist, training as a language teacher and fluent in English like the researcher, whereas Anna has intermediate level English and is being taught English by the researcher. However, Anna, too has studied to post-graduate level and is very interested in languages. The native speakers have not met each other but know each other's names and are each aware of the other's involvement in the research.

At the time of data collection, both native speakers were aware that the purpose of the conversation was to investigate the NNS's comprehension of Polish, but they did not know any more details.

Each of the native speakers enjoys an informal relationship with the NNS, both NS and NNS being aware of each other's professional and family background The NNS knows the

names of the partner of each of the native speakers, but has not met Anna's partner in person. Both native speakers have met the researcher's husband and children and know their names.

Immediately after each conversation, both the NS and NNS summarized the content of the conversation in English and in writing ("immediate recall", or NS-IR/NNS-IR for short), but the NNS filed the NS's notes without looking at them.

As soon as possible after each of the 4 conversations, and after the NS had gone home, the researcher viewed the video recording and transcribed in English what she thought was being said by both the NS and the NNS. (Transcribing in English is necessary, as the NNS-researcher's low L2 level does not allow her to transcribe in Polish, and because the English transcription will allow the researcher to "read" fluently through her own representation of what she understood in the conversation.)

In the course of transcription, the researcher also indicated in the transcript: a) instances of non-comprehension, marked with XXX?; b) sections of the conversation where the NNS thought she had understood something (perceived comprehension), together with notes on some of the most salient factors (marked in different colours) which the NNS remembers to have contributed to that comprehension, according to the *initial* list of comprehension factors (see appendix 1); and c) notes about the message which the NNS thought the NS was trying to convey by what she said, and about what the NNS was thinking or trying to say, marked in square brackets. The NNS's transcription together with all these notes constitutes the NNS's stimulated recall notes (NNS-SR).

Both the transcription and the additional notes were based on the NNS's recall, stimulated by the video, of what she understood or didn't understood and why.

The initial list of CF was based on the researcher's intuition and initial reading.

One conversation per NS was then chosen randomly for analysis, having determined the order of preference in advance: Unless there were problems with the data, conversation number 2 would be chosen, otherwise number 3 or number 1.

In the event, the conversation selected for each NS was the second one (i.e. Z2 and A2 respectively), as the data proved to be adequate. Z2 was the first to be recorded, followed by A2 six days later.

The topics covered in the two selected conversations were very similar, involving mainly food (as the conversations take place over lunch), as well as wedding plans, the native speakers' respective fiancés, and a recent visit to Poland (as both native speakers happen to have recently returned from a visit to Poland to plan their imminent weddings). This means that in the second of the two selected conversations, A2, we might expect some words to be guessed based on words encountered in the previous conversation. Such words are included in the category "existing knowledge of Polish".

For each of the two conversations chosen for analysis (one per NS), the NS performed a stimulated recall with the researcher (NS-SR) by reviewing the video footage of particularly interesting parts of the conversation pre-selected by the researcher.

This was done as soon as practicable after having recorded all the conversations, and after completing the NNS-SR for each conversation (one week after recording for A2, and three weeks after recording for Z2.) The NS-SR involved the NNS-researcher asking the NS to state in English what she actually said and the message that she had intended to convey in each of the pre-selected sections, but without the NNS revealing what it was she thought she understood. The native speakers' stimulated recall comments were recorded in writing for subsequent analysis.

At the same time, the audio recordings of each of the two selected conversations were also submitted to an independent native Polish translator for transcription of the Polish and translation into English.

       b) **Data analysis**

The analysis involved the following steps:

By way of accuracy and validity checks, the translation was compared with a) the SR and IR notes of both NS and NNS and b) the video recording, to ensure accurate representation of the conversationalists' speech and intended messages (see section 3.3.3. for details).

Next, the constructs of actual comprehension, perceived comprehension, misunderstanding and non-comprehension were defined in more detail as follows:

Instances of perceived comprehension (PC) are all those parts of the conversation in which the NNS was able to perceive a message in the NS speech at the time of the conversation. PC may be immediate or delayed. Where it is delayed, it can be achieved in the course of a single NS turn (e.g. if the NNS suddenly remembers a word, or reaches comprehension gradually once the NS's words have been successfully related to the context), or over several turns (negotiation of meaning). Also, PC may be complete (where the whole of the message seems clear to the NNS) or incomplete (where part of the meaning remains unclear).

Actual comprehension (AC) is the name I have given to all those instances of PC where the comprehended message (as perceived by the NNS) consists only of ideas also contained in the intended message (as evidenced by the translation).

Instances where some of the ideas of the intended message are missing in the comprehended message have been termed "incomplete comprehension".

Misunderstanding (MU) is defined here as all those instances of PC where the comprehended message contains ideas which do not match the ideas in the intended message. We can distinguish between a slight misunderstanding where there is a mismatch of only a few of the ideas, and a serious misunderstanding, where none of the ideas of the comprehended message match those of the intended message.

Non-comprehension (NC) are those instances where the NNS cannot perceive a message at all in the NS's speech, even if individual words were understood.

These definitions draw on the work of Faerch et al. (1984), who distinguish "total comprehension" (which can be "immediate" or "delayed"), "partial comprehension" and "zero comprehension" (p. 151).

The above constructs differ from the model of "problematic communication" outlined in a study by Gass and Varonis (1991; cited in Ellis, 1994 p.260) which investigates the types of problematic communication that result in repair. In their model, "misunderstanding" is one type of miscommunication, namely miscommunication that is not followed by a repair attempt. This is the opposite to my study, which investigates not whether communication results in repair, but

rather, whether repair and negotiation result in successful or unsuccessful communication. In my model, misunderstanding, non-comprehension and actual comprehension are viewed as possible results, not causes of negotiation, and are therefore assessed at the end of the negotiation process. This allows for the fact that interlocutors are often unaware that MU has occurred.

An important feature of my model is that it distinguishes subjective and objective measures of comprehension, reflecting Thompson's (2003) subjective and objective components of meaning (see section 2.1.). The subjective measures (PC and NC) are based on what the NNS perceives, while the objective measures (MU and AC) are identified by comparing the PC instances with the translation. This is illustrated below:

Figure 1: Model of comprehension

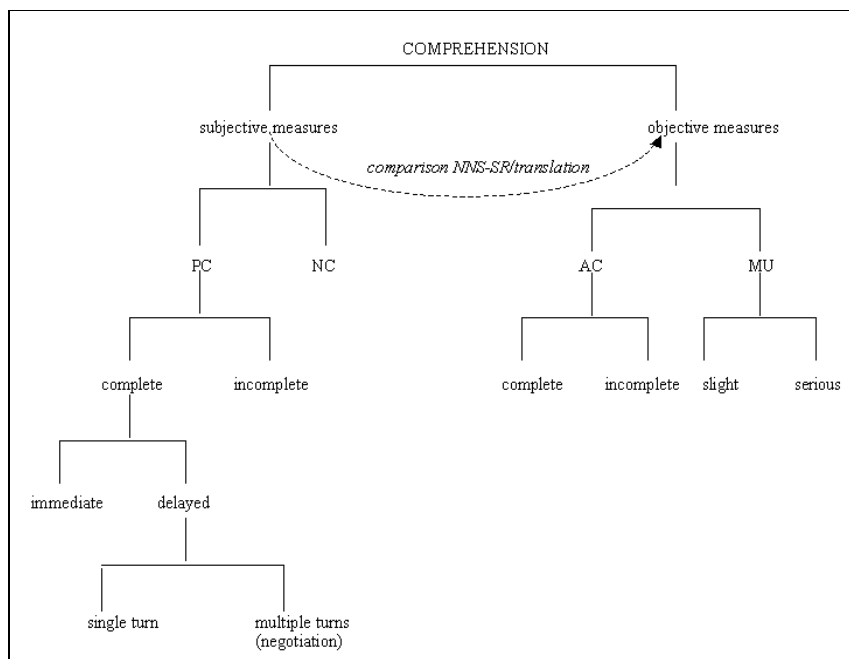**Having defined our constructs, the NNS-SR was examined to establish what the NNS thought she understood (perceived comprehension) and didn't understand (non-comprehension).**

This was based on the following clues:

- Non-comprehension was identified based on sections containing XXX? and/or comments in square brackets which indicated non-comprehension, e.g. ['I have no idea what that meant.'].

34

- Perceived comprehension was identified based on a) the presence of comprehension factors highlighted in colour; b) comments in square brackets indicating perceived comprehension e.g. ['…this must mean…']; c) any appropriate responses to the NS's speech indicating comprehension (see Hawkins, 1985); d) any "uptaking gambits" (see Faerch et al., 1984, p.72-73) such as 'mhm', 'yes', 'aah!' etc., where these were combined with appropriate responses and/or any of the other indicators of comprehension listed above.

The measure of 'appropriate response' was used only where it was supported by other indicators of comprehension, as individually this measure can easily mislead (Hawkins, 1985). The same applies to uptaking gambits, which our data reveals to be unreliable on numerous occasions (for example where the thoughts recorded in brackets contradict the uptaking gambit, as in Z2 ln59: 'Mhm. (nods) I understand. [I have no idea what that meant!]' or in ln115: 'Mhm. [I'll just say yes but I don't understand]'.

Where the NNS-SR showed none of these comprehension indicators for a particular section of the conversation, the NNS-IR and the video were also consulted to establish PC or NC.

Next, the instances of perceived comprehension were compared with the translation to establish a) where there was actual comprehension (AC), and b) where there was misunderstanding (MU).

To ensure that it was the messages (pragmatic meaning), not just the words (literal meaning), that were compared, it was necessary to first analyse what the message of the NS speech consisted of. To do this, all the PC instances were listed and the intended and comprehended messages of each extracted and compared; all the PC instances were then grouped according to whether they had been identified as instances of AC or of MU/NC (see appendix 2).

After this, the instances of actual comprehension identified in the NNS-SR were examined using the above lists, in order to discover the comprehension factors that might have contributed to AC.

At this point, the CF in the initial list were defined in more detail based on further reading, and the list was supplemented with those CF that make input "potentially comprehensible". The reasoning behind this decision is explained in section 3.3.3.

In addition, the video footage of the AC instances was examined for more clues about which factors might have helped comprehension.

Completing the picture, more general characteristics of the AC instances were also noted, regarding for example whether they are predominantly questions or statements, and predominantly feature present or past/future tense, and concrete or abstract topics.

The CF shown to have led to AC were examined in instances of MU and NC to discover the circumstances in which AC factors lead instead to NC or MU.

Finally, the instances of AC vs. MU and NC were counted to establish and compare the level of AC in the two conversations. The CF were also counted, by broad category and individually, to discover their relative importance.

As a reliability check, the levels both of AC vs. MU/NC, and of the different CF identified for AC instances, were also compared in the two conversations.

Having identified PC, NC, AC, MU and the comprehension factors, and performed the necessary validity and reliability checks, **the next step was to answer the research questions**:

1) Can an early NNS achieve comprehension of NS speech in natural, adult conversation?

2) If so,
   a) what level of comprehension can be achieved in such a situation?
   b) what are the main factors that contribute to such comprehension?
   c) what is the role and importance of these factors in the comprehension process?

To answer questions 1 and 2(a), the first step was to total the instances of AC and of MU and NC in the two conversations.

If at least one instance of AC was found, the answer to question 1 would be "yes".

To discover and compare the level of comprehension in the two conversations, i.e. how much of the total NS speech was understood, it was necessary to find out what proportion of the total of NS speech was AC.

This highlighted the need to clearly define how "NS speech" breaks down into "instances": Where do these start and end? It was already clear that we were investigating the comprehension of messages, not utterances, and that a message might span several utterances and speaker turns as its meaning is negotiated. In order to incorporate this negotiation of meaning process into the concept of "instance of NS speech", the term "communicative act" (CA), also known as "speech act" (e.g. Liu, 1999), was adopted. This term has been used in many different ways in the literature. For our purposes, it can be defined as a sequence of one or more utterances by the same or different speakers within one conversation, conveying one message as a group. According to this definition, which follows from the general relevance theoretic perspective on communication put forward by Sperber and Wilson (1986), a CA begins where a new proposition is made (which may or may not be a new topic), and ends when *all* of the negotiation process that is part of decoding the message of that proposition is complete, whether the negotiation was successful or not.

Having defined where a CA begins and ends, AC, MU and NC could now be assessed more precisely by looking at the degree to which the comprehended message of each CA matches the intended message at the *end-point* of that CA, i.e. on completion of the negotiation.

The process of counting the AC instances also revealed a number of occasions when the NNS did not appear to have paid any attention to NS speech. Such "non-attention" was evident firstly from the video, where the NNS's body posture and movement, gestures and facial expression show that she is distracted, e.g. checking the video camera, or thinking about her next utterance. Secondly, non-attention was evident from the NNS-SR notes, either explicitly, where the SR states that the NNS has not paid attention to something in the conversation or did not want to make the effort to negotiate (e.g. Z2 ln170), or implicitly, e.g. where the SR makes no reference to all or part of a CA, or where no attempt is made to negotiate meaning, even though NC has been recorded (e.g. Z2 ln76-77). The instances of non-attention were included in the total count of CA, but disregarded in the count of AC, MU and NC.

It also became clear that NNS production constituted a large proportion of the total number of CA. This was unexpected (see section 3.2.1.) and needed to be resolved. Only those instances of NNS production that were in response to NS speech as part of the negotiation process of a CA were considered for analysis (e.g. Z2 ln124-134). NNS-initiated production (labelled "PR" and highlighted with a yellow background in the transcripts) was disregarded in the count of AC, MU and NC (e.g. A2 ln200-202). Similarly, where a NS response to an NNS-initiated CA formed part of the negotiation for that CA, it was not counted as a separate NS speech instance

(e.g. Z2 ln108-112, and A2ln227 and 229). However, NS responses which contained a new proposition (as opposed to just being part of the negotiation for the NNS's proposition) were counted. (e.g. A2 ln231).

The individual NS utterances which formed part of the negotiation process for a CA were not counted separately, but as part of that CA.

Having clarified what should and should not be counted, the level of comprehension achieved in each of the conversations was calculated as follows:

1) **The number of CA in each conversation was totaled and non-attention and NNS-initiated production (PR) instances subtracted.**
2) **This result was then compared with a) the total number of AC and b) the total number of NC+MU.**

To check reliability, the comprehension levels of the two conversations were compared with each other.

Question 2(b) (the main factors that contribute to comprehension) was then addressed:

I identified which comprehension factors from our initial and supplementary lists (see appendix 1) **were present in the AC instances.** This was done by counting each CF once for each AC in which it occurred.

I then considered the role of NNS production, NS questions and topic choice in comprehension:

The importance of production was investigated by comparing the number of AC instances featuring among the NS-initiated CA attended to (i.e. total CA minus NNS production minus non-attention) with the number of AC instances featuring among the NS-initiated CA which were responses to NNS production.

To examine the role of NS questions in NNS comprehension, I looked at whether AC instances are mostly questions or statements, and also compared the number of NS questions to the number of AC instances in each conversation.

Finally, question 2(c) (the role and importance of the factors) was addressed in the following ways:

a) **by investigating each CF's relative importance in terms of frequency using the above CF frequency count.** I examined not only the frequency of the individual factors, but also which broad CF category (e.g. non-verbal communication, context, linguistic knowledge etc.) was most strongly represented.

b) **by examining the circumstances in which factors identified for AC lead instead to MU and NC.** This enabled me to avoid hasty conclusions about the strength of the different factors in achieving comprehension, and to make discoveries about how exactly each of the factors helps comprehension.

Comparing the CF occurrence in the two conversations also acted as a further reliability check.

3.3.3. Methodological justifications

For this study, a qualitative approach was chosen, because negotiation of meaning is a complex process of interaction (Ondarra, 1997) which requires in-depth analysis - hence the decision to use only two native speakers conversing with the same NNS.

The advantage of self-observation is that the NNS-researcher knows exactly what she understood and what were some of the more salient factors that contributed to this comprehension. Stimulated recall using the video recording refreshes the memory, so any elements of the conversation which were missed in the diary notes (immediate recall) are not lost for the analysis, while the immediate recall itself guards against what we have called "hindsight comprehension". This is because it happens sooner after the conversation than the NNS-SR. The concept of hindsight comprehension will be discussed further below (see section 3.3.3.a). Identifying the CF based on a combination of the NNS's memory and the video footage combines the benefits of both insider and outsider observation.

a) Justification of the data collection procedure

Recordings

Recording 3 25-minute conversations per NS provided a backup option: It was decided in advance to use the "middle" of the three conversations, unless there were any problems (e.g. insufficient quantity or quality of data, or any sort of technical difficulties). In the event that problems did occur, the third, or if necessary, the first, conversation would be used instead. Deciding the order in advance ensures the choice is random to avoid the temptation of "picking the best data" to fit the hoped-for findings! The order "2-3-1" is to ensure the middle conversation is given first priority. This is based on the assumption that by the second conversation, initial problems due to unfamiliarity or nervousness will have worn off, while any potential effects of over-familiarity, boredom or previous experience will not yet have set in. Similar reasoning applies to the length of the conversations: 15 minutes is long enough to obtain sufficient data without making the analysis process too onerous; adding 5 minutes at either end and only analysing the middle 15 minutes guards against the effects of nervousness or boredom etc. described above.

The recording devices were deemed to be sufficiently small and discrete to minimise the "observer effect". It was also hoped that the informal and familiar setting of the researcher's own home might help to put the participants at ease. Any fears that the research setup might cause the participants to be unduly inhibited in their talk proved unfounded. The video footage suggests that apart from the occasional time when the NNS checked that the camera was working properly or how many minutes were left, in both conversations, the NS and NNS were talking freely and enjoying the experience!

The audio recording acts as a backup and forms the basis for the translation, as it was felt that the visual information might prove unnecessary and distracting to the translator. Any inaccuracies resulting from insufficient background information, lack of visual clues, or inadequacies in the recording, can be identified using the video and the NS-SR and NNS-SR.

Conversation topics

Choosing the conversation topics in advance can pose a validity threat, as it reduces spontaneity and may prepare the NNS-researcher for what she is likely to hear, which may aid comprehension. At the same time, however, the NS needs to be assisted in deciding what to talk about, so as not to render the data unusable because of non-communication. The compromise I reached involves giving the NS free choice of conversation topics, whilst also providing a topic list for the NS to select from if she wishes.

Setting

The primary concern regarding my choice of setting was to make this as natural, familiar and comfortable as possible, and to provide a "background activity" (i.e. eating lunch) to prompt natural conversation topics and reduce any awkwardness that might result from the somewhat artificial nature of the setup.

Participants

As described in section 3.3.2.a),the NNS is a-typical in that, as a linguist who has learned a number of languages, she probably has a stronger-than-average metalinguistic awareness, which may help comprehension (Gass and Selinker, 2001).

Also, as the researcher, she has a strong interest in keeping the conversation going and working hard at negotiating meaning. (The latter helps explain the exceptionally long sequences of NNS production found in the data.) However, as we will see, the NNS's knowledge of other languages plays a relatively insignificant role as a comprehension factor in our data, and the above drawbacks are offset by the benefits of self-observation.

Although the aim was to keep as many variables as possible constant, there are some differences between the two native speakers. The first, Anna's lower level of English, does not threaten reliability because the investigation concerns the *NNS's* comprehension of Polish. The second difference concerns the fact that Anna is the researcher's English student, whereas Zosia is a study colleague. Again, this is not regarded as a problem because it is not Anna's English that is being studied, and so the friendship element is assumed to outweigh the teacher-student element of the relationship.

The NNS possesses a good deal of background knowledge about the native speakers, such as their social situation, awareness of their imminent weddings and recent visits to Poland, as well as aspects of their personality. These may all help the NNS predict the conversation topics and thus aid comprehension. This could have been avoided by choosing native speakers whom the NNS did not know, but not without also forsaking much of the naturalness of the conversation.

Ondarra (1997) explains that the distribution of power between the participants in terms of their role, their social status, their status in the conversation and their status due to knowledge can affect who takes the main lead in the conversation. As we will see, this in turn affects comprehension. It is evident from the description of the participants in section 3.3.2.a) that the NNS is the weaker participant in terms of her knowledge of Polish, while at the same time her role as the researcher gives her the stronger status. We might then assume that these two factors cancel each other out. However, in her conversations with Anna, the NNS is the stronger participant in terms of her social status as an English teacher, and in both conversations, a stronger status can be assumed because the NNS is ten years older than the native speakers. These two factors combined mean that we might expect the NNS to take a stronger lead in the conversations, especially with Anna.

Stimulated recall, translation, and immediate recall

Ensuring the validity of my three main data sources involves the following considerations:

The main purpose NNS-SR was to identify and record *what* was understood/not understood *at the time of the conversation*, and *why* it was understood. It allows the researcher to guard against the "hindsight effect" on comprehension. This is important, because in the course of the analysis, the NNS-researcher will be exposed to the same NS speech input many times by repeatedly watching the video, which may increase her comprehension of the input.

Of course, the NNS-SR itself is based on the NNS's second exposure to the NS speech (i.e. watching the video). However, it is still a more reliable indication of comprehension than the "appropriate response" measure (Hawkins, 1985), because it records the NNS's actual thoughts. This does not mean that "appropriate response" cannot be used to identify where comprehension took place. However, where the two indicators contradict each other, the NNS-SR must be given precedence.

The NNS-SR notes were made immediately after the conversation because the NNS-researcher relies on memory to identify comprehension and the comprehension factors. By minimising the time delay; the NNS-SR is more likely to reflect what was understood during the conversation as opposed to "in hindsight". The NNS's memory was supported by the video recording, and the immediate recall notes help in those instances where the researcher is not certain what she understood at the time.

The fact that the NNS as a native German speaker transcribed the conversation and the NNS-SR notes in English is not considered a validity threat, as the researcher is a near-native English speaker who thinks in English and therefore transcribes her recall thoughts directly in English without translating them from German first. Having said that, the researcher's German mother tongue, along with the other languages she has learned, can be expected to assist her comprehension of the Polish conversation.

Because the researcher is also the NNS, the translation is an indispensable tool allowing her to check what was said compared with what she understood. (This could not be done adequately by using the immediate and/or stimulated recall notes of the NS, because these cover only extracts of the conversation.) By comparing the translation with the SR and IR notes of both NS and NNS and with the video before using it to check comprehension, the researcher can assure herself that the translation accurately represents what the speakers actually said and intended to say. This is important as the translator is an outsider who is not aware of the immediate and wider context of the conversation or of the participants, and works from the audio recordings, i.e. without visual clues. Apart from the possibility of inaccuracy, the translation is itself an interpretation of meaning, so it is important to check this interpretation is as close as possible to the intended meaning if it is to be used as an indicator of actual comprehension. Because both the SR and the IR notes only cover extracts of the conversation based on the participants' memory, neither can check this accuracy 100% reliably.

The translator has not participated in the conversation, guarding against the possibility of her being influenced by a desire to make the translation fit the hoped-for findings.

Finally, as neither the translation nor the NS-IR are carried out by native English speakers, comparing them with each other allows errors to be identified based on inconsistencies between them.

The above shows that none of our data sources can ensure data validity by themselves: they all depend on each other and need to be triangulated.

b) **Justification of the data analysis procedure**

Establishing the level of comprehension

To establish the NNS's level of comprehension, only the AC instances (as opposed to all the instances of PC) were counted. This is because not everything that the NNS perceives to have understood necessarily corresponds to the NS's intended message. The purpose of this study is to investigate *actual* comprehension, where the comprehended message matches the intended message.

Before any counting could be done, communicative acts, NNS production, and non-attention were all defined, ensuring that it was comprehension of NS speech that was being investigated, and that the count was fair.

I decided that instances of non-attention should be disregarded in the count of AC, MU and NC, because where there is non-attention, the researcher has no way of knowing if the CA under investigation would have been understood or not, had the NNS paid attention.

Similarly, it was felt that NNS production could not be included in the comprehension count, as it does not in itself constitute NS speech. However, it seems important in terms of its potential influence on the NNS's comprehension of NS speech. This is because NNS production is a type of context clue, in that NNS-initiated speech produces an expectation that the NS's response will relate to what the NNS has just said. This expectation may help the NNS understand the NS's subsequent response. We therefore need to distinguish between two types of NNS production within the conversations: NNS-initiated production, and NNS production that is simply part of the negotiation of meaning process of NS-initiated speech. Consequently, I decided a) to include instances of production in the total CA count, but not the total AC count; b) to a mark production acts as "PR" and show them separately in the CA count; and c) to add production ("pr") as a potential comprehension factor to our list of comprehension factors to look out for.

MU and NC were counted together, because in terms of the numbers we are interested only in how much was understood, as opposed to how much wasn't understood correctly or at all.

Comparing the number of AC instances in the two conversations also acts as an important reliability check: if the levels of AC vs. MU/NC turn out to be very different in the two conversations, we need to question generalisability.

Identifying the comprehension factors

The indication of comprehension factors in the NNS-SR can only provide a starting point for assessing what helped comprehension, because it depends on the salience of such factors during the conversation. It is difficult to separate the NNS-SR from the data analysis stage, because identifying the CF necessarily involves a degree of interpretation, even at the SR (i.e. data collection) stage. For this reason, and because the list of possible factors can never be exhaustive, adding more factors during the analysis stage does not invalidate the data.

The main purpose of indicating possible comprehension factors during the NNS-SR is to allow the researcher to distinguish between existing TL knowledge and other factors that helped comprehension. This distinction is crucial, because this study seeks to discover what factors help comprehension where TL knowledge is *limited*. The NNS herself is best placed, especially with the conversation fresh in her memory, to make this distinction, as she knows not only which words are in her existing vocabulary, but also which of those she was able to access for comprehension *at the time*. As we will see, the two are not necessarily the same, and the above-mentioned "hindsight effect" could tempt the researcher to attribute too much of the comprehension to existing TL knowledge; hence the importance of noting comprehension factors in the NNS-SR, immediately after the conversation.

The above reflects one of the challenges that arise from the researcher being both insider and outsider at the same time. This means she perceives the comprehension factors on two levels: the level of the conversation, and the level of the analysis of the transcript and video footage.

The comprehension factors operating in the AC instances were identified based on two lists (see appendix1):

The "initial list" contains those CF that make input *actually* comprehensible, i.e. which the NNS actually uses to determine meaning. These include non-verbal communication, linguistic and non-linguistic context, and linguistic knowledge. These were included at the SR stage because they were the most salient to the NNS-researcher, both during the conversation and the initial examination of the data immediately afterwards.

The "supplementary list" consists of those factors that make input *potentially* comprehensible. These are less salient, and therefore not identified in the initial SR, but they can be expected to, and were found, to help based on the literature and a closer examination of the transcript. These factors, which include interactional strategies, NNS production and some paralinguistic features, were included at the data analysis stage, i.e. after the NNS-SR was completed, in an effort to reflect the bulk of the literature, and to help account for all of the instances of actual comprehension.

This list of comprehension factors is by no means exhaustive.

In the course of re-examining the literature in search of additional CF, the factors in the initial list were also defined more precisely and subdivided into more specific categories. Therefore, the classifications originally used in the NNS-SR have been indicated in the list.

Comparing the types of CF identified for AC instances in the two conversations allows for another reliability check: if the CF that aid AC in one conversation were shown to be very different to the ones identified in the other conversation, reliability would need to be questioned

Examining the importance and role of the comprehension factors

To establish the importance of the comprehension factors in terms of their frequency, each factor was counted only once per AC, even if it occurred more than once in that instance. This was done to avoid counting all the occurrences of a factor *within* a CA, as it is the relative importance of the factors for each CA, not for individual utterances within it, that is being investigated. In addition, counting each CF only once avoids a bias towards linguistic factors, as these can be identified on a word-basis, whilst other factors such as non-verbal communication usually apply to a string of words.

As our main focus is on which factors contribute to *comprehension* as opposed to misunderstanding or non-comprehension, the main emphasis of the analysis was on identifying the CF that occur in instances of AC. However, a look at the MU and NC instances is useful to avoid giving the impression that the factors identified necessarily result in comprehension in all circumstances.

3.3.4. Successes, challenges and changes regarding the methodology

Although 3 conversations per NS were planned, only two were necessary. No problems were encountered in conducting and recording the two middle conversations, and their data was considered of sufficient quality for analysis.

It was originally intended that the NNS-SR notes should be written only for the two selected conversations, after completing all the conversations. However, because several weeks elapsed before this stage was reached, it seemed advantageous to complete the NNS-SR for all the conversations, so as to minimize the time delay between the selected conversations and their respective NNS-SR. Practical constraints meant most of the NNS-SR was completed immediately after, and the remainder within a few hours, of each conversation.

Conversely, the NS-SR was completed only for the conversations chosen for anlaysis rather than for all the conversations as originally planned, so as not to overburden the native speakers. Also, instead of asking the NS to complete her SR at her own home, with all the potential complications regarding equipment compatibility and data transfer inherent in this, it was more practical for the NS and researcher to complete the SR together at the researcher's home. This also meant that interesting extracts could be pre-selected for the SR, thus avoiding the time-consuming option of completing the SR for the entire conversation. To avoid the risk, inherent in this setup, of the NNS-SR and the NS-SR influencing each other, the NNS did not reveal to the NS what she thought she understood at the time, and the NS-SR was not performed until *after* the NNS-SR. The only drawback was that, due to the participants' time commitments (and extreme weather conditions!), the NS-SR was not completed immediately, but delayed by 1 and 3 weeks respectively.

It was clear from the literature on negotiation of meaning and interaction reviewed in sections 2.2.1.b) and 2.2.1.c) that identifying PC and NC on an individual utterance basis or even by individual speaker turns would not be adequate, as negotiation is a process undertaken jointly by NS and NNS which may span several utterances and turns. This is why the transcripts were divided up into communicative acts. In some cases, these coincided with pairs of turns, while in others they were longer, sometimes up to 30 lines! Dividing the conversations into longer sections in this way made it much easier to trace the negotiation of meaning process, and in particular the end-points of the negotiations, allowing a more accurate count of the AC, MU and NC instances as a result.

The record made in the NNS-SR of the details of what was perceived as understood or not and what the NNS was thinking or trying to say at the time proved very useful in the analysis stage: Many times these comments provided the only reliable clue to what was really perceived, as the NNS's responses (e.g. backchannel cues, or phrases such as 'I understand/I don't understand') turned out to be very unreliable, as Hawkins (1985) found. The conversation data shows that many times, backchannel cues were used by the NNS not so much to indicate comprehension or non-comprehension, but rather to keep the NS talking in the hope for more cues, or to signal the NNS's desire to move on, or because the words, but not the message, were understood and vice versa.

Equally useful was the idea to examine the CF identified for AC in instances of MU and NC: this analysis allowed many insights into the way the different CF combine to achieve comprehension, and their relative importance in negotiating meaning.

However, the analysis was not without its challenges:

For instance, identifying AC was not straightforward, firstly, because a satisfactory and practical definition of AC had to be found which allowed a clear distinction from MU, NC and incomplete comprehension (see section 3.3.2.b). Secondly, when trying to count up the AC and MU/NC instances, it became clear that comprehension is not static (i.e. either present or absent), but that it is a process, whereby a listener may at first experience non-comprehension, or understand the words but not the message, but may, through negotiation, obtain various clues (linguistic or otherwise) which gradually enable her to interpret the message conveyed by the words – or not, in the case of unsuccessful negotiation. This made me realize that, if I marked AC, MU, and NC separately for all the propositions within a negotiation process, most of them would be marked NC, as the NNS gradually negotiates her way through to comprehension. I therefore decided to re-count, marking AC MU or NC only at the very end of each completed negotiation to avoid distorting the proportions in favour of NC.

Writing up the NNS-SR also revealed a number of inconsistencies between the video footage, the NNSSR and the translation content, as well as other errors. However, these errors could not simply be "amended" because, as we saw in section 3.3.3.a), none of the different forms of data collected could be deemed 100% accurate by themselves (apart from the video, which was the only direct source of data). Because of this, the following procedure was adopted:

1) Where there were inconsistencies or omissions, these were added or highlighted in green in the NNS-SR column based on the video evidence, but without changing the translation or the

NNS-SR; 2) sections contained in the video that were accidentally omitted either in the translation or in the NNS-SR were only analysed where they formed a crucial part of a longer exchange that also contained plenty of information without errors or omissions; 3) transcription errors (leading to translation errors) often resulted from a lack of visual clues, or because statements were misheard as questions, or NS speech misheard as NNS speech and vice versa, while translation errors were sometimes accidental, and sometimes the result of the translator being an outsider with insufficient background information about the situation or the participants. Both transcription and translation errors were corrected after consultation with the translator and other Polish speakers; 4) typing, spelling and grammatical errors in the translation were corrected by the researcher.

A further challenge was to find satisfactory solutions for dealing with instances of NNS production and non-attention. These have been discussed in section 3.3.2.b).

4. DESCRIPTION OF THE RESULTS

Table 1 shows the basic counts that were done for both conversations in answer to the research questions.

	Z2	A2
Total CA	73	78
Total NS speech attended to	**46**	**60**
AC (resp. to PR)	**28** (12)	**30** (9)
MU	10	14
NC	8	16
MU+NC (resp. to PR)	**18** (5)	**30** (4)
Non-attention	2[3]	3
NNS Production (PR)	25	15

Table 1: Comprehension counts

Here is how to read it:

"Total NS speech attended to" refers to the total of NS-initiated speech (i.e. not counting NNS production) to which the NNS paid attention (i.e. not counting non-attention): CA *minus* production *minus* non-attention.

---

[3] Regarding non-attention, there are 5 other CA in Z2, which may have been instances of non-attention, but as these were not recorded in the NNS-SR, we cannot be certain. Therefore these were not counted, either in the CA total or in the count of non-attention instances.

This total is made up of AC, MU, and NC, as NS speech can be understood, misunderstood or not understood.

The number in normal font in brackets after the AC total indicates how many of the AC and MU/NC instances were accounted for by NS speech that was in response to earlier NNS production, in the sense of "NS response" discussed in section 3.2.2.b).

I will now examine how the above figures answer my research questions.

4.1. Achievability of actual comprehension

It was stated earlier that if at least one instance of AC was found in the conversations, the answer to question 1) (Can an early NNS achieve comprehension of NS speech in natural, adult conversation?) is "yes".

There are in fact numerous instances of AC in both conversations (30 in one, 28 in the other), which shows that it is indeed possible for a NNS to achieve comprehension of NS speech in natural adult conversation.

4.2. Level of actual comprehension

To calculate what level of comprehension was achieved in the two conversations (question 2a), i.e. how much of the total NS speech attended to was understood, the total number of AC and the total number of NC+MU respectively were divided by the total NS speech attended to (CA minus PR minus non-attention).

In A2, the proportion of AC is exactly equal to MU+NC (i.e. AC and MU+NC constitute exactly half each of the total NS speech attended to), while in Z2, the proportion of AC even exceeds that of MU+NC (AC is just under two thirds of the total NS speech attended to). We can thus state that a substantial amount (at least half) of the NS speech attended to was understood.

However, before generalising this result, we will need to examine to what extent the participants and their relationship with each other are typical of adult native and non-native speakers generally. This will be discussed in section 5.

A comparison of the comprehension levels in the two conversations reveals a higher level of AC in Z2 than in A2. Interestingly, Z2 also shows a higher level of NNS-production (PR): just under one third of the total CA compared to just over one-fifth in A2.

4.3. Factors that contribute to actual comprehension

To find out what are some of the main factors that contribute to actual comprehension (question 2b), I looked at which comprehension factors on my list (see appendix 1) were actually present in the AC instances. Some of these had been identified as part of the NNS-SR.

Table 2 and table 3 show which categories of comprehension factors, as well as individual comprehension factors, occurred in the AC instances, together with their relative frequencies.

CF	Z2	CF	A2
Total CF occurrences counted	**92**	**Total CF occurrences counted**	**113**
Linguistic knowledge (lk)	26	Linguistic knowledge	35
Non-verbal communication (nvc)	18	Non-verbal communication	24
Non-linguistic context (nlc)	14	Non-linguistic context	18
Linguistic context (lc)	12	Linguistic context	15
Paralanguage (pl)	10	Modified interaction	10
Modified interaction (int)	6	NNS production	7
NNS production (pr)	6	Paralanguage	4

Table 2: Comprehension factor categories in order of frequency

CF	Z2	CF	A2
lk1	20	lk1	23
nvc1	11	nvc1	17
lc1	10	lc1	14
pl2	8	nlc1	8
nvc2	7	lk3	7
nlc1	7	nvc2	7
pr	6	nlc2	7
nlc2	5	Pr	7
lk3	3	lk4	5
lk4	3	pl2	4
int3	3	nlc3	3
nlc3	2	int1	3
lc2	2	int3	3
pl1	2	int5	2
int1	1	lc2	1
int5	1	int7	1
int9	1	int9	1
lk2	0	lk2	0
int2	0	int2	0
int4	0	int4	0
int6	0	int6	0
int7	0	int8	0
int8	0	int10	0
int10	0	int11	0
int11	0	pl1	0

Table 3: Individual comprehension factors in order of frequency

The above tables reveal that the numbers for the two conversations are very similar, indicating reliability; they also show that most of the individual factors and categories of factors from our list were represented in instances of AC.

With the exception of lk2 ("intralingual cues") in both conversations, and pl1 ("tone of voice") in A2, all the CF for which the count is 0 fall into the "interaction" category.

Regarding the role of NNS production and NS questions as comprehension factors, the following was found:

Production

Referring back to table 1, both conversations show a significant proportion of NNS production (just under one third of the total CA in Z2 and just over one fifth in A2). These production acts sometimes span several turns. (e.g. Z2 ln175-185; A2 ln12-17). As a result, a significant

proportion of NS speech attended to was in response to NNS production (just over one third in Z2 and just under one quarter in A2), of which most was understood (AC) as opposed to misunderstood or not understood (MU+NC): responses to production that resulted in AC were about two thirds of the total responses to production in Z2 and about three quarters of the total responses to production in A2. In Z2, the level of NNS-production is higher, as is the proportion of responses to NNS production that are AC.

The transcripts also show that in both conversations, non-attention mostly occurs in connection with NNS production.

Overall, then, NNS production plays an important role both in the conversations as a whole, and in shaping the NS speech - and the NNS's comprehension of NS speech - within them.

Questions:

To investigate the role of NS questions in comprehension, the number of questions in the AC instances was counted. This revealed that NS questions accounted for very few of the AC instances (5 questions in A2; 9 in Z2*).

4.4. Importance of the factors in the comprehension process

To establish the importance of the AC factors within the comprehension process (Question 2c), I examined both their frequency counts (tables 2 and 3) and their occurrence in MU and NC instances.

Before comparing the frequency counts for the two conversations, it should be noted that in both conversations, most of the instances of "paralanguage" (pl) are accounted for by the use of questions. The way the NNS distinguishes a question from a statement is mainly through intonation, which is a paralinguistic feature of communication (pl2). Because Z2 features twice as many questions as A2, the "paralanguage" count is pushed up. The higher rank of both the category "paralanguage" and the "pl2" factor in Z2 should therefore not lead to conclusions about the general importance of this factor, as it says more about the use of questions than the use of paralanguage. We should also bear in mind that the only other paralanguage factor that is observable within the scope of this study, tone of voice, only features in one of the conversations, and was generally not very salient and therefore difficult to identify. A truer

picture of the relative frequency of the comprehension factors and categories might be achieved, then, if "paralanguage" is removed from the count altogether. Let us simply note generally that intonation helps to distinguish questions from statements, and that tone of voice may help comprehension but would need to be investigated more closely. This produces the following amended version of the frequency tables:

CF	Z2	CF	A2
Total CF occurrences counted	**92**	**Total CF occurrences counted**	**113**
Linguistic knowledge (lk1: 20)	26	Linguistic knowledge (lk1: 23)	35
Non-verbal communication (nvc1: 11)	18	Non-verbal communication (nvc1: 17)	24
Non-linguistic context (nlc1: 7)	14	Non-linguistic context (nlc1: 8)	18
Linguistic context ((lc1: 10)	12	Linguistic context (lc1: 14)	15
Modified interaction (int3: 3)	6	Mod. Interaction (int3 and int1: 3 each)	10
NNS production	6	NNS production	7

Table 2b: Comprehension factor categories in order of frequency, without paralanguage

CF	Z2	CF	A2
lk1	20	lk1	23
nvc1	11	nvc1	17
lc1	10	lc1	14
nlc1	7	nlc1	8
nvc2	7	nvc2	7
pr	6	lk3	7
nlc2	5	nlc2	7
lk3	3	pr	7
lk4	3	lk4	5
int3	3	int3	3
nlc3	2	nlc3	3
lc2	2	int1	3
int5	1	int5	2
int1	1	lc2	1
int9	1	int9	1
int2	0	int7	1
lk2	0	lk2	0
int4	0	int4	0
int7	0	int2	0
int6	0	int6	0
int8	0	int8	0
int10	0	int10	0
int11	0	int11	0

Table 3b: Individual comprehension factors in order of frequency, without paralanguage

This version of the tables shows very clearly that we can be assured of reliability, as the order of frequency of the CF categories is identical, and the order of frequency of the individual factors almost identical, in the two conversations. Even so, given the qualitative nature of this study, the results would need to be tested with a number of different native speakers before they can be generalised.

The findings for both conversations regarding the importance of the different comprehension factors and CF categories in terms of their relative frequency are as follows:

Linguistic knowledge, context and non-verbal communication are the CF categories with the highest frequency. Interestingly, the totals of linguistic and non-linguistic context factors combined are very similar to those of the linguistic knowledge factors (26 in Z2 and 33 in A2). So "context" taken as a whole ranks on a par with linguistic knowledge. If "context" is broken down into linguistic and non-linguistic context, then non-verbal communication ranks slightly higher than each of these, though the numbers of these three are very similar.

Both modified interaction and production feature very low on the categories list.

In the case of production, this is not so much to do with its importance as with the fact that it constitutes a single factor, while the other categories each contain more than one factor. The significant amount of production found in both conversations, and the fact that production features in the upper third of table 3b, support this interpretation.

Conversely, in the case of the interactional factors, their low frequency is evident from both lists, despite the fact that interaction is the category, which contains the most (11) individual factors.

The interaction factors that do occur are int3, int5, int1, int9, and, for A2 only, int7.

It is interesting to note that some of the individual factors are much more frequent than the other factors within their category (as evident from the number of the most frequent comprehension factors indicated in brackets). These are lk1 (existing TL knowledge), nvc1 (gestures, actions and facial expressions), nlc1 (situational cues), lc1 (expectation of semantic coherence), and int3 (clarification request).

Existing knowledge of the target language (lk1) is the most frequent factor overall (table 3b) and far outweighs the other factors in the linguistic knowledge category (table 2b).

NNS production, too, is comparatively frequent as it features in the top third of the individual factors list (table 3b).

Lk3 (new words learned in the conversation) and lk4 (knowledge of other languages) are much less frequent than lk1, while lk2 (intralingual cues) does not feature at all in the instances of AC.

The number of NS questions in the AC instances is low (10 in Z2 and 5 in A2) compared to the number of statements.

I will now examine the circumstances in which the factors identified in the AC instances have led to MU or NC.

Linguistic knowledge

The instances in which lk1 leads to MU or NC show that the strength of this factor depends on the NNS's L2 level. For the known words to aid comprehension they need to be recognised, which is not always the case. For example, on numerous occasions, grammatical endings that indicate tenses or the equivalent of articles prevent the NNS from recognizing known words, as these endings have not yet been encountered (e.g. in Z2 ln61-62, 'kupił', the past tense form of 'kupić' – 'to buy' prevented the NNS from recognising the word ''kupić' although it was known.).

Known words are also sometimes not recognized because a word occurs within a longer stream of speech containing many unknown elements (e.g. 'Poland', although known – see A2 ln57 and 61 - is not recognized in A2 ln77-78), or because the NNS's attention is focused on another part of the utterance, or because only the form, but not the meaning of the word is remembered (e.g. 'kiedy' ('when') in Z2 ln229). Also, it cannot be assumed that a new word (lk3) is necessarily available for comprehension immediately, even if the meaning of that word was negotiated not long before (e.g. in A2 ln166-167, 'lat' ('years') was not understood, despite having been negotiated in ln120-124).

In addition, as we will see below, context expectations are very strong, which means that they can override lk cues where they contradict them (see for example A2 ln193: because of the (misunderstood) context - the NNS thinks that the NS has been talking about the NNS's husband's age -, the NNS misinterprets 'And John?' as 'Is John that age?', even though 'and' is a known word).

Knowledge of other languages (lk4) can be misleading, as is evident in Z2 ln218-224, where the NNS's mistaken assumption that the Polish word for 'August' is likely to be based on the Latin, leads to a series of comprehension checks. Similarly, in Z2 ln24-26, the NNS unsuccessfully

checks the meaning of 'alvo' ('or'), because she wrongly assumed that it must mean 'white', based on Latin.

By themselves, lk1 and nvc don't necessarily produce comprehension, especially if they don't cover every aspect of the message. For example, in Z2 ln72-75, lk1 covers only 'and', 'you' and 'good' which is supplemented by 'wedding' through nvc; the key word of the message, 'remember' is not covered, resulting in the NNS thinking the NS wants to know about her wedding dress, when she actually asked whether the NNS remembers her wedding well. Similarly, in A2 ln7, the key word 'tried' is not covered by lk or nvc, causing the NNS to understand 'I don't 'like…' instead of 'I've never tried…'.

Non-verbal communication

Non-verbal communication can be misunderstood for different reasons: gestures may be misinterpreted (e.g. Z2 ln270-272; A2 ln28a and many others); the same object may be used to illustrate different meanings (e.g. A2 ln87-88); a drawing may not be recognisable (A2 ln43); or writing may not be understood (A2 ln152-153). The latter is especially likely where, as in my case, the NNS is not yet familiar with the relationship between the L2 spelling and sounds, although writing of numbers may be successful (e.g. A2 ln130).

Also, concepts, which are abstract or removed in time, are harder to convey through nvc (e.g. in Z2 ln30b-32, 'will be' is not conveyed). While miming of 'past' or 'future' is possible (e.g. A2 ln59, ln169 and ln175), it is not always used. Because, as we saw above, concepts removed in time can also pose problems due to unfamiliar verb forms, it is not surprising that MU often occurred where the message referred to past events (e.g. Z2 ln149-156; A2 ln26b-27). This is not to say, that no messages about the past were understood: the data shows that the concept of 'past' can be successfully conveyed by means of context and nvc2 such as writing down dates (e.g Z2 ln144).

Linguistic and non-linguistic context

Context cues can lead to MU where the linguistic context expectation is violated (e.g. in A2 ln175, 'How did you meet?' cannot be predicted on the basis of 'How old were you when you met?' discussed in ln166-174, although it is related), or where the context is not clear (e.g. in A2 ln37 the NS cannot understand how 'egg' links to the discussion about 'favourite food'). Similarly, MU or NC can be caused by a violation of non-linguistic context expectations (e.g. in

Z2 ln49-53 the NNS cannot make sense of the CA because she does not expect a bride-to-be to make a negative comment about the way she looks in her wedding dress).

Also, where the link between what is said and what was said previously is temporarily interrupted by a different topic, MU may result. Such interjections can take the form of interactional factors such as a confirmation check or clarification, or momentary distractions such as the NNS offering some more salad (Z2 ln108-127). The latter is especially likely to cause MU in our particular situation, because the NNS is keen to interpret the meaning of every single NS utterance; in a more natural situation, she may be more inclined to skip over a comment about food as incidental to the main conversation topic.

In addition, MU can occur where the interlocutors do not share the same background information or assumptions. For example, in Z2 ln149, the NNS did not share the NS's assumption that 'travel' might be an expected activity that newlyweds engage in while they have the chance, i.e. before they have children; the NNS therefore failed to recognize the vital context cue that linked 'travel' to the previous topic 'weddings', and which might have helped her understand the idea of 'past' even without the necessary grammatical knowledge.

The above examples show that if the linguistic or non-linguistic context is unclear or context expectations are violated, the language itself and individual aspects of the message may be understood, but the message as a whole cannot be perceived (non-comprehension) or is "adjusted" to match the expected context (misunderstanding).

Production

NNS production, too, can cause MU due to context, where there is a violation of the expected context-link between the NNS's speech and the NS's reply. Such context violation might be due to the interjections discussed above, or it may be caused when the NS's reply to the NNS's question contains more information than the NNS bargained for. For example, in A2 ln118, the NS's answer to the NNS's question '[Is your mum] happy [that you're getting married]?' gives additional information to what the NNS expected ('Yes she likes him very much.'), and is therefore misunderstood as 'Yes, she is very happy'. This is based on the "conversational maxim of quantity": only give as much information as necessary (Grice, 1975; cited in Richards and Schmidt, 1983, p.45).

Interaction

In general, where there is non-comprehension, it is the interaction factors that produce negotiation of meaning, which in turn allows a move to perceived comprehension. However, sometimes the negotiation results in misunderstanding which, if recognized, can be followed up with more negotiation. In our conversations, however, the NS and NNS mostly remain unaware of misunderstandings.

The success of the interaction factors in achieving comprehension depends on the success of the nvc, lk and context cues they bring about. For example, a paraphrase (int5) may fail to illustrate meaning if the key words used are not known to the NNS (e.g. in A2 ln94-104, the key word 'place', which is the essential meaning component that distinguishes 'shop' from 'to buy' is not understood, resulting in MU.)

5.   DISCUSSION OF THE RESULTS

5.1. Interpretation and discussion of the findings

In this section I will list and interpret the main findings of this study (indicated in *italics*), discuss their significance and generalisability, and compare them with the expected findings listed in section 3.2.

Comprehension by early non-native speakers is possible.

The fact that an early NNS can achieve actual comprehension in natural conversation with a NS, and a considerable level of it at that, in spite of her low L2 level, suggests that factors other than knowledge of the target language contribute significantly to comprehension. Investigating what these factors are and how they work together is therefore legitimate.

At least half of the NS speech attended to can be understood.

This result may not completely generalise to all early NNS. In our scenario, the personality of the subjects, the friendship between them, their educational background, their awareness of the purpose of the research, the familiarity and informality of the setting and the topics, as well as the NNS's strong meta-linguistic awareness and her readiness to produce the target language,

may all have contributed to comprehension. However, if an early NNS and a NS should find themselves having to communicate in real life without access to a translator (e.g. an immigrant trying to socialize in a new environment, or a missionary trying to learn a new language in the field), the communicative need may be much greater than in our somewhat artificial setup, leading to increased negotiation and comprehension. This might balance out or even outweigh some of the advantages the research subjects had in our situation.

It must also be borne in mind that the participants have a very similar cultural background. If, as Ondarra (1997) states, "shared knowledge of the world is cultural", then the high rank of nlc1 (situational cues/shared knowledge of the world) among the comprehension factors means that a lower level of AC can be expected in situations where there are significant cultural differences between the interlocutors.

Notwithstanding the above, it is clear that neither conversation confirms the prediction that MU and NC will exceed AC by far: rather, the count of AC is exactly equal to MU+NC in one conversation, while in the other AC even exceeds MU+NC. This shows that lack of existing L2 knowledge does not necessarily lead to lack of comprehension.

Regarding the level of comprehension, it is interesting to note that Z2 has a higher level of AC than does A2. There are several possible explanations to be considered:

It could be argued that the level of practice provided by the research itself may have helped comprehension; this is clearly not the case, because Z2 was the 3rd, A2 the 4th conversation undertaken.

Based on the literature, another possible reason might be a higher level of interaction in Z2. However, the frequency count of interactional strategies (table 3b) shows there is only a slight difference between the conversations regarding the contribution of interaction factors to AC, and it is A2 that has the higher level of interaction factors. Furthermore, the transcript reveals that Anna has great tenacity in negotiation of meaning, persevering for as many as 30 lines to ensure all the ideas have been communicated (e.g. A2 ln166-196).

The fact that Zosia is a linguist and training as a language teacher might mean she is better able to make input comprehensible, but no concrete proof for this is obvious from the data.

Most importantly, it should be noted that Z2 also has a higher level of PR (NNS-production), which could suggest that production has an indirect effect on the overall comprehension of the

conversation. This does seem plausible if we also consider that it is not only the level of production, but also the proportion of AC instances accounted for by NS speech in *response* to NNS production, that is higher in Z2**.** If the NNS's speech acts as a context clue to the meaning of the NS's response, it follows that where a greater proportion of NS propositions are prompted by NNS production, more of the total NS speech is understood**.** Therefore, an additional finding of this study is that

NNS production positively influences NNS comprehension.

Perhaps the biggest surprise in our study was the volume of NNS production. This was totally unexpected, given the NNS's low L2 level. Of course, the NNS's strong language-learning background, exceptionally strong motivation to communicate due to being the researcher, and her taking the lead in the conversation as the more powerful participant (Ondarra, 1997) all contribute to this unusually high level of production. These factors also explain why our data contradicts the finding of Schmidt and Nagem Frota (1986) that most topics are initiated by the NS.

Even so, the data shows that NNS production makes a significant contribution to comprehension, judging by the total of production instances (table 1), the proportion of comprehended NS speech that was in response to production (table 1), and the relative frequency of "production" as a comprehension factor (table 3b). This, too, was unexpected, because comprehension tends to be associated with listening, not speaking. The role of production in the comprehension process will be discussed in detail below.

The fact that non-attention is mostly coupled with NNS production suggests that it is caused by the NNS's attention being temporarily diverted from NS speech while she plans her own production.

NS questions may indirectly help comprehension by prompting NNS production.

A look at the frequency of questions vs. statements in the AC instances reveals that the majority of NS speech instances for which AC was achieved are statements. This may indicate that NS questions do not necessarily contribute to AC. They may however contribute to increased NNS production (as evidenced by Z2 featuring twice as many questions *and* a higher level of production), and thus indirectly help comprehension. This seems a reasonable conclusion considering that in many cases, the questions prompt NNS speech, as opposed to clarifying its meaning.

Linguistic knowledge, non-verbal communication, non-linguistic and linguistic context and modified interaction all contribute to comprehension.

In other words, all the expected CF categories were covered in the AC instances.

Possible explanations for their relative frequencies are discussed below. However, we need to bear in mind that any conclusions arrived at in this respect would need to be tested in a quantitative study before they are fully generalised, as the frequencies are only based on two conversations.

Existing L2 knowledge is the most frequent comprehension factor, closely followed by non-verbal communication and context.

The fact that linguistic knowledge is the highest featuring category is not surprising, given that language is one of the main vehicles for communication. It confirms Gass and Selinker's (2001) view that comprehension is based on prior linguistic knowledge. In fact, with very few exceptions, for each AC instance, at least one linguistic knowledge factor was identified as having contributed to comprehension.

What did surprise, however, was that it was lk1 ("existing TL knowledge"), not lk4 ("knowledge of L1 and other languages") that not only far outweighed the other linguistic knowledge factors, but was also the most frequent factor overall. This is all the more surprising given the considerable knowledge of other languages and the very limited TL knowledge that the NNS-researcher possesses.

The fact that there are some instances where AC is achieved without lk factors (e.g. A2 ln165, 197, 199 and 207; Z2 ln133-134) shows that comprehension is possible without prior linguistic knowledge (Thomson, 1993). We can conclude, then, that comprehension is based on prior linguistic knowledge (Gass and Selinker, 2001), but not exclusively.

My expectation that comprehension depends largely on existing TL knowledge was met, yet not in the sense that comprehension is only possible to the extent that the words are familiar, but rather in the sense that lk1 takes the lead in the comprehension process. Thanks to context and nvc, limited TL knowledge does not necessarily mean limited comprehension, as even early non-native speakers make use of lk1 over and above the other comprehension factors.

Regarding other linguistic knowledge factors, the reason lk2 ("intralingual cues") did not contribute to comprehension may be that the NNS's level of Polish grammar was too low for her to be able to deduce meaning from the word forms.

Non-verbal communication and linguistic and non-linguistic context are key to comprehension.

As expected, non-verbal communication (nvc), and linguistic and non-linguistic context (lc and nlc), rank very high. (This shows that their sparse coverage in the NS/NNS conversation literature is not justified). The reason nvc and context are similar in frequency to linguistic knowledge may be that, where linguistic knowledge is insufficient, nvc is next in line for conveying the content of the message (Thomson, 1993). Context has great importance, as it is context that "connects what is said to what is mutually assumed" (Levinson, 1983; cited in Ondarra, 1997, p.50). To interpret meaning, listeners in any conversation constantly search for this connection to answer the question "What does this have to do with what I know and with what has just been said?". It is in this sense that, as any translator knows, meaning "depends on the context".

The above also reflects Krashen's (1985) analysis that what makes input comprehensible is essentially "linguistic knowledge" on the one hand and "extra-linguistic information" (i.e. context and non-verbal communication) on the other.

Although features of modified interaction are the least frequent comprehension factors, they play an important role in comprehension by facilitating negotiation of meaning.

The relatively low rank occupied by the interaction factors in general shows that their importance in terms of frequency compared to other factors is much less than one might have expected considering their coverage in the literature. However, it should be remembered that while the interaction studies describe all the interactional features that occur, this study lists only those that helped *comprehension*. Unsurprisingly, many of the interaction factors marked with a "0" count are *production* related (e.g. int4, int8, int10 and some of the "power tools" of int11). However, this does not apply to int2 (comprehension checks) or int6 (self-repetition). Given that these also show a "0" count, we might therefore make the tentative claim, subject to further tests, that int2 and int6 do not actually contribute to NNS comprehension. As for the "power tools" not related to production – int11 - , their effectiveness cannot be assessed as these did not occur, simply because the NNS had not yet learned such phrases as 'please repeat' and 'please say it more slowly'.

Other interaction factors such as clarification requests (int3), paraphrase (int5), confirmation check (int1), clarification (int9) and other-repetition (int7, in A2 only) do seem to have contributed to comprehension (if to a much lesser degree than linguistic knowledge, context and nvc). This is not surprising, because with the exception of int7, these factors all potentially provide the NNS with additional information where meaning is unclear. In this way, they move the NNS from non-comprehension towards actual comprehension (Long, 1982; cited in Park, undated, "Review of the Literature").

This shows that, though the interaction factors are not very important in terms of frequency, their importance lies in the fact that they initiate the negotiation process. While nvc and context might theoretically be sufficient by themselves to allow the NNS to supplement her lack of linguistic knowledge to make sense of the message, in practice these factors are not always "available" automatically, but often have to be prompted through negotiation by means of interaction strategies. This explains why Long (1983b; cited in Ellis, 1985, p. 157-158) claims that interaction is the most important factor for communication. However, our discussion below will reveal the strength of this claim.

Among the interaction factors, int3 ("clarification request") features relatively frequently. This may be because of the NNS's strong desire to achieve comprehension of all of the NS's speech. Clarification requests were mostly performed by repeating the NS's speech with question intonation.

Regarding the topics covered by the two conversations, on the whole these were concrete and familiar to the NNS (e.g. food, weddings etc.). Topic familiarity has been found to positively affect comprehension (Gass and Varonis, 1984; cited in Ondarra, 1997, p.66). This means that the generalizability of the level of comprehension found in this study should be checked in further studies, which involve more abstract and unfamiliar topics.

The circumstances in which the above factors lead to misunderstanding or non-comprehension reveal further details about their importance in the comprehension process:

Linguistic knowledge

We have seen that not all the words the NNS knows because of existing linguistic knowledge necessarily aid comprehension, be it because the NNS cannot access or recognize them or because they do not cover the whole of the message. Linguistic knowledge is therefore supplemented by information extracted from non-verbal communication and context.

Context

Where a context-link is interrupted by another topic, this can cause misunderstanding, presumably because what is said is expected to link directly to the previous CA. Also, as we have seen, context cues can override cues based on linguistic knowledge and non-verbal communication. This shows that context provides the strongest cue of the three in terms of interpreting meaning, even though linguistic knowledge cues are more frequent.

This is further confirmed by our finding that even where all the words are understood, NC can be perceived if it is unclear how the message links to the context, or if there is violation of context expectations.

All the above makes it clear that, while linguistic knowledge, supplemented by nvc, provides the content information of the message, context helps to piece that information together so that it makes sense. One cannot function without the other: The interplay between these three factors is key to the interpretation of meaning.

In addition, the finding that a lack of shared information, expectations and assumptions can cause MU is significant: it shows that the more knowledge the interlocutors have of each other's background and the more their assumptions about what people do in certain situations are shared, the greater their mutual comprehension. This is why a shared cultural background aids mutual comprehension.

It is interesting to note in the data that sometimes it is an expectation of what will be said next that aids comprehension. This can be a type of situational cue based on previous experience (e.g. in A2 ln195-198, the NS's comment is expected because it corresponds to how people usually comment on the age difference between the NNS and her husband) or simply something based on a "sixth sense" as in A2 ln79-82.

Non-verbal communication

Like linguistic knowledge, non-verbal communication is not sufficient on its own: it needs the support of context and, if available, linguistic knowledge, to allow meaning to be interpreted. This is because there is a good deal of ambiguity inherent in nvc (just as there is in language), which can be resolved with the help of the other factors.

Because nvc is by nature concrete rather than abstract, and because it supplements meaning where linguistic knowledge is limited, topics removed in time are difficult for an early NNS. In the light of this and of the emphasis on the importance of 'here-and-now' topics in the literature, it was a surprise to discover just how much of both conversations revolved around past events. As mentioned above, this caused a number of misunderstandings because of the unfamiliar verb forms. However, the fact that such topics were discussed indicates that the view that "here-and-now" topics are easier to understand (Larsen-Freeman, 1985, Schmidt and Nagem Frota, 1986, and Ellis, 1994) means only that choosing such topics facilitates comprehension; it does not mean that discussing topics removed in space and time is impossible.

NNS production

The fact that NNS production can lead to MU where it interrupts the flow of the NS's speech, confirms that production acts as a type of context cue, as the NNS expects the NS's subsequent speech to link in some way to what the NNS has just said. Where this expectation is met, it will significantly aid comprehension: NNS production works as a CF because it drastically narrows down the possibilities of what topic the NS is likely to address next and what her speech about that topic is likely to mean. Where the expected link to the NNS's speech does not materialize, confusion results.

When we look upon production as a type of context and also consider the importance of context discussed above, it is not surprising that increased production should result in an increased level comprehension (AC), as table 1 shows.

In addition, production also helps to keep the conversation going. This increases the likelihood of the NNS receiving more clues, which in turn increases comprehension.

Interaction

The main role of the interaction factors is to bring about additional linguistic, non-linguistic and context clues. This is supported by my finding that the success of the interaction factors depends on the effectiveness of the linguistic, non-linguistic, or context cues they bring about. In this sense, the interaction factors, unlike lk, nvc and context, are not cues in themselves, but can be seen as "carriers" of the other cues. For example, a paraphrase means that more words are supplied that can potentially be understood through linguistic knowledge, or that the context link is made clearer. A clarification request may be responded to by acting out the meaning of the utterance, using different words, or pointing to an object. Where the cues the interaction brings to the negotiation process are misleading or insufficient, misunderstanding results.

This may also be one of the reasons why interaction factors feature relatively infrequently compared to other comprehension factors: Because interaction does not in itself help to interpret meaning, but simply prompts the use of other factors that do, it only has to feature where such prompting is necessary. As mentioned above, the data may well contain many more instances of interaction that were not included in our count of the factors that contributed to comprehension; this is simply because in many instances, the information derived from linguistic knowledge, context and non-verbal communication was sufficient to allow an interpretation. This means interactional factors are not necessary all the time, but only where such additional information is required. It is interesting to note that my expectation that interaction will not play a major role in comprehension is confirmed, but not for the reason expected (namely that a NNS's use of interactional factors requires a certain level of TL knowledge): In fact, our data shows that many of the interactional strategies did not require L2 knowledge as they were performed either through nvc (e.g. A2 ln36-40) or, in the case of int3, by simply repeating the NS's speech with question intonation (e.g. A2 ln9-10; Z2 ln78-80).

5.2. Alternative approaches

The generalisability of the comprehension level found could be checked by carrying out follow-up studies with a number of different native and non-native speakers (e.g. different sex, age group, educational background, setting etc.). Comprehension may be reduced in studies that do not use self-observation, as the NNS may take less of a lead in the conversation and may be less motivated to work out meaning.

The frequencies of the CF found could be systematically tested by means of a quantitative study.

6. CONCLUSION

6.1. Summary of the results

The results of this study held surprises on a number of counts.

The level of comprehension was much higher than expected. While my specific characteristics as the NNS-researcher and my strong role in the conversations are likely to have pushed the comprehension level up, this does not negate the finding that limited target language knowledge does not necessarily entail limited comprehension: The data clearly shows that factors other than L2 knowledge are at work in the comprehension process. Also, I am an "a-typical" NNS mainly with regard to knowledge of other languages, yet this factor does not feature very frequently in comprehension.

Existing TL knowledge, though very limited, turned out to contribute much more strongly to the comprehension process than expected. Although the predicted importance of nvc was confirmed by the data, nvc was not used *instead of* existing TL knowledge as expected, but simply supplemented it, as the lower rank of nvc compared to lk1 shows (see table 2b and 3b). It seems, then, that the NNS uses all her existing knowledge of the language, however limited, supplementing it with nvc where necessary, to extract meaning form the NS's speech.

This study makes it very clear that what allows the NNS to successfully do this is in fact the presence of linguistic and non-linguistic context cues. Their powerful role revealed in our analysis suggests that it is the availability, and the NNS's use, of these context cues that are at the heart of the interpretation process. This is because it is the context that allows a listener to draw together both linguistic and non-linguistic cues to interpret the meaning of what is being said.

The finding that meaning is interpreted by combining the words we hear with what we already know, is of course not unique to communication with non-native speakers, but applies to communication in general, as noted in the literature review. However, given the limited language knowledge, a NNS's reliance on context and non-verbal cues has to be much greater than that of a NS.

My analysis also shows the importance of NNS production in comprehension. Again, the level of production was much higher than expected. Whilst this might be explained by the a-typical background of the NNS and the unequal power relationship in her favour, this feature of our

conversations, a-typical as it may be, is useful in that it shows that production aids comprehension. This is attributed to NNS production acting as an additional context cue that prepares the NNS for what will be said. Production may also help by keeping the conversation going, thus increasing the likelihood that the necessary meaning cues will be provided.

It was interesting to investigate what contribution the much-observed interaction strategies actually make to comprehension. My analysis reveals that interactional factors do not contribute to comprehension in and of themselves, but act as a vehicle that brings the other comprehension factors into the negotiation process. This is why, athough their occurrence is consistently observed in NS/NNS conversation, interactional factors do not always contribute to comprehension. They are, however, crucial to comprehension where communication problems are encountered. This explains the finding (e.g. Pica et al., 1986; cited in Salazar, undated, p.2, Gass and Varonis, 1994; cited in Salazar, undated, p.4, and others) that comprehension increases where there is interaction.

Although it is clear that as the NNS-researcher, my focus on comprehension and my linguistic background and experience are likely to have helped me make the most of the comprehension factors available, there is no reason to believe that these characteristics had an influence on what factors contributed to my comprehension, on their relative importance, or on the way the factors combine in the comprehension process.

The above shows that, contrary to my expectations and the way input and interaction studies have traditionally portrayed it, comprehension in natural conversation is a process which involves the NNS's active participation. It is up to the NNS not only to recognize the words in the NS's speech, but also to interpret any nvc cues the NS provides in order to supplement or explain those words. Most importantly, it is the NNS who interprets all the available context cues, linking the information received (linguistic and non-linguistic) to the information already known. If the available cues are insufficient, it is up to the NNS to signal this and obtain additional cues through interaction. This does not mean that the NS cannot ease the comprehension process by adjusting her speech to the NNS's perceived comprehension level and by providing meaning clues. What it does mean is that it is not enough for the NS to simply *provide* the comprehension factors: they must be actively obtained and *used* by the NNS in order to actually achieve comprehension. This is why a NNS who is not the researcher might achieve less comprehension, as she is less likely to try hard to use all the available cues and obtain additional ones. This would need to be tested in further research.

In conclusion, the way that the different factors work together in NNS comprehension can be explained using the analogy of building a house: Linguistic knowledge and non-verbal communication provide the basic building bricks, i.e. the *content* of the message. Context clues (including those based on NNS production) are like the "mortar" that links all the building blocks together; this is the *intention* or "why" element of what is being said. Finally, interaction can be compared to the building supplier who delivers extra materials when necessary: The interaction factors facilitate *negotiation of meaning*, clarifying and prompting linguistic knowledge, non-verbal communication and context factors where there are problems.

6.2. Suggestions for further research

Having excluded input modifications from the analysis for the reasons explained at the beginning, it would be useful for a Polish-speaking linguist to analyse my data in order to identify any input modifications and to examine if and how these contribute to AC.

It might also be interesting to see how much comprehension is achieved in a natural conversation that is not specifically set up for research purposes, where the NNS is not aware that the aim is to achieve as much comprehension as possible. However, this cannot be done without also forfeiting the benefits of self-observation.

Finally, it would be good to investigate the level and factors of comprehension in a conversation where target language knowledge is non-existent. Thomson (1993) maintains that non-verbal communication makes it possible to understand a NS before any of the language is known. This seems plausible given that it is how children learn their first language. A comparison between a NNS who has limited target language knowledge and one who has none was originally planned, but was found to be outside the scope of this study.

REFERENCES[4]

Adamczyk, B. (1995) *Langenscheidts Expresskurs Polnisch: Das Wichtigste für Alltag und Reise.* Berlin, Munich: Langenscheidt KG.

Asher, J. (1972). Children's first language as a model for second language learning. *Modern Language Journal*, 56, 133-139.

Baranczak, A. M and Rettig; U. S. (2004) *Pimsleur Quick & Simple Polish (Pimsleur Language Program).* New York: Simon & Schuster, Inc.

Bateson, G. (1972) *Steps to an Ecology of Mind.* New York: Ballantine.

Blakemore, D. (1992) *Understanding Utterances: An Introduction to Pragmatics.* Oxford: Blackwell.

Brenner, K., Broeder, P., Roberts, C., Simonot, M. and Vasseur, M.T. (eds) (1988) *Ways of Achieving Understanding: Communicating to Learn in a Second Language.* Strasbourg: European Science Foundation.

Carton, A.S. (1971) Inferencing: a process in using and learning language. In P. Pimsleur and T. Quinn (eds) *Papers from the Second International Congress of Applied Linguistics, Cambridge, 1969.* Cambridge: Cambridge University Press.

Cook, V. (2001) *Second Language Learning and Language Teaching.* London: Hodder Arnold.

Ellis, R. (1985) *Understanding Second Language Acquisition.* Oxford: Oxford University Press.

Ellis, R. (1991) The interaction hypothesis: A critical evaluation. In E. Sadtono (ed) *Language Acquisition and the Second/Foreign Language Classroom.* Singapore: RELC.

Ellis, R. (1994) *The Study of Second Language Acquisition*. Oxford: Oxford University Press.

Faerch, C. and Kasper, G. (1986) The role of comprehension in second language learning. *Applied Linguistics*, 7 (3), 257-274.1

Faerch, C., Haastrup, K. and Phillipson, R. (1984) *Learner Language and Language Learning.* Clevedon: Multilingual Matters.

Ferguson, C. (1971) Absence of copula and the notion of simplicity: A study of normal speech, baby talk, foreigner talk and pidgins. In D. Hymes (ed) *Pidginization and Creolization of Languages.* Cambridge: Cambridge University Press, pp. 141-150.

Ferguson, C. and Debose, C. (1977) Simplified registers, broken languages and pidginization. In A. Valdman (ed) *Pidgin and Creole.* Indiana University Press.

Fraser, B. (1983) The domain of pragmatics. In J.C. Richards and R.W. Schmidt (eds) *Language and Communication.* New York: Longman, pp. 29-60.

---

[4] Some authors fail to include in their bibliography the page number references of chapters from edited books cited in their work. Where these sources could not be located, the page numbers have been left out of the above list.

Freed, B. (1980) Talking to foreigners vs. talking to children: similarities and differences. In R. Scarcella and S. Krashen (eds) *Research in Second Language Acquisition.* Rowley, Mass.: Newbury House.

Freed, B. (1981) Foreigner talk, baby talk, native talk. *International Journal of the Sociology of Language,* 28, 19-39.

Gass, S. and Selinker, L. (2001) *Second Language Acquisition: An Introductory Course.* 2nd Edition. Mahwah, NJ: Erlbaum

Gass, S.M. and Madden, C. (1985) Introduction. In S.M. Gass and C. Madden (eds) *Input in Second Language Acquisition.* Cambridge, Mass.: Newbury House, pp. 3-16.

Gass, S.M. and Varonis, E.M. (1984) The effect of familiarity on the comprehensibility of nonnative speech. *Language Learning*, 34, 65-89.

Gass, S.M. and Varonis, E.M. (1991) Miscommunication in nonnative speaker discourse. In N. Coupland, H. Giles and J. Weimann (eds) *"Miscommunication" and Problematic Talk.* Newbury Park: Sage Publications.

Gass, S.M. and Varonis, E.M. (1994) Input, interaction and second language production. *Studies in Second Language Acquisition*, 16, 283-302.

Grice, H.P. (1975) Logic and conversation. In P. Cole and J. Morgan (eds) *Syntax and Semantics.* Vol. 3. New York: Academic Press, pp. 41-58.

Gumperz, J. (1982) *Discourse Strategies.* Cambridge: Cambridge University Press.

Hatch, E. (1978) Discourse analysis and second language acquisition. In E. Hatch (ed) *Second Language Acquisition: A Book of Readings.* Rowley, Mass.: Newbury House.

Hatch, E. (1983a) Simplified input and Second Language Acquisition. In R. Andersen (ed) *Pidginization and Creolization as Language Acquisition.* Rowley, Mass.: Newbury House.

Hatch, E. (1983b) *Psycholinguistics: A Second Language Perspective.* Rowley, Mass.: Newbury House.

Hawkins, B. (1985) Is an "appropriate response" always so appropriate? In S.M. Gass and C. Madden (eds) *Input in Second Language Acquisition.* Rowley, MA: Newbury House, pp. 162-180.

Kasper, G. and Kellerman, E. (eds) (1997) *Communication Strategies: Psycholinguistic and Sociolinguistic Perspectives.* Harlow: Longman.

Krashen, S. (1980) The Input Hypothesis. In J.E. Alatis (ed) *Current Issues in Bilingual Education.* Washington, D.C.: Georgetown University Press.

Krashen, S. (1985) *The Input Hypothesis: Issues and Implications.* London: Longman.

Krashen, S. (1998) TPR: Still a very good idea.
http://www.languageimpact.com/articles/other/krashentpr.htm [14 Sept. 2009]

Larsen-Freeman, D. (1985) State of the art on input in second language acquisition. In S.M. Gass and C. Madden (eds) *Input in Second Language Acquisition.* Rowley, MA: Newbury House, pp.433-444.

Levinson, S.C. (1983) *Pragmatics*. Cambridge: Cambridge University Press.

Liu, S. (1999) What is pragmatics? http://www.gxnu.edu.cn/Personal/szliu/definition.htm [3 Sept. 2009]

Long, M. (1980) *Input, Interaction and Second Language Acquisition*. Unpublished Doctoral Dissertation, University of California, Los Angeles.

Long, M. (1981) *Input, interaction and second language Acquisition.* Paper presented at the New York Academy of Science Conference on Native and Foreign Language Acquisition, New York, USA.

Long, M. (1982) Native speaker/non-native speaker conversation in the second language classroom. In M. Long and C. Richards (eds) *Methodology in TESOL: A Book of Readings.* New York: Newbury House, pp. 339-354.

Long, M. (1983a) Native speaker/non-native speaker conversation and the negotiation of comprehensible input. *Applied Linguistics*, 4(2), 126-141.

Long, M. (1983b) *Input and Second Language Acquisition Theory.* Paper presented at the 10th University of Michigan Conference on Applied Linguistics, October, Ann Arbor, USA.

Long, M. (1983c) Linguistic and conversational adjustments to non-native speakers. *Studies in Second Language Acquisition*, 5(12), 177-193.

Long, M. (1985) Input and second language acquisition theory. In S.M. Gass and C.G. Madden (eds) *Input in Second Language Acquisition.* Cambridge, Mass.: Newbury House, pp.377-393.

Loschky, L. (1994) Comprehensible input and second language acquisition: What is the relationship? *Studies in Second Language Acquisition*, 16, 303-323.

Nation, I.S.P. (2001) *Learning Vocabulary in Another Language.* Cambridge: Cambridge University Press.

Ondarra, K. (1997) *Collaborative Negotiation of Meaning: A Longitudinal Approach.* Atlanta, G.A.: Rodopi B.V., Amsterdam.

Park, E. What makes input more comprehensible? http://www.tc.columbia.edu/academic/tesol/han/eunsung.html

Pica, T. (1988) Negotiated interaction as an aid to learner output. *Language Learning*, 37, 471-493.

Pica, T. (1994) Research on negotiation: What does it reveal about second language learning conditions, processes and outcomes? *Language Learning*, 44, 493-527.

Pica, T., Doughty, C. and Young, R. (1986) Making input comprehensible: Do interactional modifications help? *ITL Review of Applied Linguistics*, 72, 1-25.

Pica, T., Young, R. and Doughty, C. (1987) The impact of interaction on comprehension. *TESOL Quarterly*, 21 (4), 737-759.

Richards, J.C. and Schmidt, R.W. (1983) Conversational analysis. In J.C. Richards and R.W. Schmidt, (eds) *Language and Communication.* New York: Longman, pp.117-155.

Ross, S. (1997) An introspective analysis of listener inferencing on a second language listening test. In G. Kasper and E. Kellerman (eds) *Communication Strategies: Psycholinguistic and Sociolinguistic Perspectives.* Harlow: Longman, pp.216-237.

Rost, M. (1990) *Listening in Language Learning.* London: Longman.

Salazar, P. Comprehensible input and learning outcomes. www.uji.es/bin/publ/edicions/jfi2/compren.pdf [2008, 21 Aug]

Schmidt, R.W and Nagem Frota, S. (1986) Developing basic conversational ability in a second language: A case study of an adult learner of Portuguese. In R. Day (ed) *Talking To Learn: Conversation in Second Language Acquisition.* Cambridge, Mass.: Newbury House.

Scollon, R. and Scollon, S.W. (2001) *Intercultural Communication: A Discourse Approach.* 2nd edn, Oxford: Blackwell.

Sperber, D. and Wilson, D. (1986) *Relevance: Communication and Cognition*. Oxford: Blackwell

Thompson, N. (2003) *Communication and Language: A Handbook of Theory and Practice.* Houndmills, New York: Palgrave Macmillan.

Thomson, G. (1993) Kick-starting your language learning: Becoming a basic speaker through fun and games inside a secure nest. http://www.sil.org/LinguaLinks/languagelearning/EssaysOnFieldLanguageLearning/KickStrtngYrLnggLrnng/KickStrtngYrLnggLrnng.htm [2008, 14 Aug.]

Webster's New World College Dictionary (2005) Cleveland, Ohio: Wiley Publishing, Inc. Used by arrangement with John Wiley & Sons, Inc. http://www.yourdictionary.com/comprehension [2009, 11 Aug.]

APPENDIX

APPENDIX 1

LISTS OF COMPREHENSION FACTORS

The "initial list" contains those factors which are <u>actually</u> used by the NNS to work out meaning, while the "supplementary list" consists of those that make input <u>potentially</u> comprehensible.

Because extra factors were added after the NNS stimulated recall to arrive at a more detailed classification for the analysis stage, the factors originally identified in the NNS-SR (see transcripts in appendix 3) are highlighted in the colours used in the stimulated recall notes.

Italics indicate additions I have made to the CF listed in the literature, a) by way of clarification and b) to reflect actual findings in the data.

Initial List

abbr.	Description and Explanation	References
nvc	**Non-verbal communication:**	Hawkins (1985; cited in Gass and Madden, 1985, p.167); Thomson (1993); Ellis (1985); Hatch (1978; cited in Ellis, 1985, p.141); Hatch (1983; cited in Gass and Madden, 1985, p.4); Nation (2001)
nvc1	**Gestures (including nodding and shaking of the head) and actions,** *facial expressions*	
nvc2	**Objects, pictures, drawings,** *writing of TL text or of numbers, dates* **etc.;**	

	pointing to objects (*or pictures/ drawings*) with or without naming them	
nlc	**Non-linguistic context:**	Gass and Selinker (2001); Long (1983c; cited in Ellis, 1985, p. 157-185); Carton (1971; cited in Faerch et al., 1984, p. 96-97); Thompson (2003); Nation (2001); Cook (2001)
nlc1	Shared knowledge of the world, situational cues (*i.e. general knowledge of what a person normally does in this situation*); *expectations based on previous experience*	
nlc2	**Wider context, i.e. knowledge of the interlocutor's social and cultural background** (*e.g. family and professional background, imminent wedding, recent visit to Poland etc.*)	
nlc3	Immediate context, i.e. knowledge of the specific circumstances and surroundings of the conversation (*e.g. "eating lunch in the kitchen"*)	
lc	**Linguistic context:**	
lc1	**Immediate context/co-text** /textual cues/expectation of semantic coherence (*i.e. expectation that the utterance will link to the current topic*)	Long (1983c; cited in Ellis, 1985, p. 157-185); Carton (1971; cited in Faerch et al., 1984, p. 96-97); Thompson (2003); Nation (2001); Cook (2001); Faerch et al. (1984)
lc2	Discourse cues/expectation of discourse coherence (e.g. adjacency pairs *such as "answer follows question"*)	Faerch et al. (1984)
lk	**Linguistic knowledge:**	
lk1	**Existing knowledge of the target language**	Gass and Selinker (2001); Long (1983c; cited in Ellis, 1985, p. 157-185)
lk2	Intralingual cues/deductions from word form	Carton (1971; cited in Faerch et al., 1984, p. 96-97); Cook (2001)
lk3	**New word learned in this conversation**	*Factor identified by the myself: forms part of lk1*
lk4	**Knowledge of L1 and other languages**/interlingual cues/link to cognates	Gass and Selinker (2001); Carton (1971; cited in Faerch et al., 1984, p. 96-97); Cook (2001)

Supplementary List

int	Modified interaction[5]:	
int1	Confirmation check (*Is this what you mean?*)	Day (1986); Long (1980; cited in Gass and Selinker, 2001, p. 274); Ellis (1985); Long (1983); Ellis (1994)
int2	Comprehension check (*Do you understand?*)	Day (1986); Long (1980; cited in Gass and Selinker, 2001, p. 274); Ellis (1985); Long (1983; cited in Ellis, 1985, p. 141-142); Long (1983); Ellis (1994)
int3	Clarification request (*What do you mean?*)	Day (1986); Long (1980; cited in Gass and Selinker, 2001, p. 274); Ellis (1985); Long (1983; cited in Ellis, 1985, p. 141-142); Long (1983); Ellis (1994)
int4	Request for help	Day (1986)
int5	Paraphrase (*i.e. re-stating in a different way); providing a synonym*	Pica, Doughty and Young (1986; cited in Salazar, undated, p. 2); Ellis (1985)
int6	Self-repetition	Long (1983c; cited in Ellis, 1985, p. 157-185); Long (1983; cited in Ellis, 1985, p. 141-142); Hatch (1983; cited in Gass and Madden, 1985, p.4); Ellis (1985); Long (1983); Ellis (1994)
int7	Other-repetition	Long (1983c; cited in Ellis, 1985, p. 157-185); Long (1983; cited

---

[5]Modified *input* features were not included in this list. This is because, as we have seen, these features are described in comparative terms. This means that their analysis requires a detailed awareness of what are the "normal" features of the language in terms of grammar, vocabulary etc, when it is addressed to native speakers - an awareness which, by definition, the NNS-researcher does not possess.

The questions in brackets after int1, int2 and int3 are intended to explain what is meant by the particular comprehension factor term; they are by no means the only expression of that particular comprehension factor. For instance, in this study, the NNS frequently performs clarification requests (int3) by repeating all or part of the NS's speech with question intonation. (This is not to be confused with "other-repetition" (int7), which in the literature mainly refers to the NS's repetition of the NNS's speech.)

It should be noted that the boundaries between the interaction factors are not clear-cut and overlap a great deal in the literature. The above reflects an attempt to define them in the way which seemed most useful for this study, but it is possible to group them differently depending on the particular research purpose.

		in Ellis, 1985, p. 141-142); Hatch (1983; cited in Gass and Madden, 1985, p.4); Ellis (1985); Long (1983); Ellis (1994)
int8	Expansion *(adding extra information to NNS's utterance)*	Long (1983c; cited in Ellis, 1985, p. 157-185); Ellis (1985)
int9	Clarification (I mean…/for example…)/ *speaker adds more detail to own speech*	Long (1983c; cited in Ellis, 1985, p. 157-185)
int10	Prompting / helping NNS find the right words/ NS models what she guesses the NNS is trying to say	Long (1983c; cited in Ellis, 1985, p. 157-185); Hatch (1978; cited in Ellis, 1985, p.141); Thomson (1993); Pica (1988; cited in Park "Review of the Literature")
int11	"Power tools" (e.g. 'how do you say…?'; 'what's this?'; 'please repeat'; 'please say it more slowly')	Thomson (1993)
pr	**Production:**	
pr	*NNS production acting as a meaning clue because the NS speech is in response to the NNS production.*	*Comprehension factor identified by myself*
pl	**Paralinguistic features[6]:**	Thompson (2003)
pl1	**Tone of voice**	
pl2	Intonation	

---

[6] The features of "paralanguage" listed by Thompson (2003) also include speed, loudness, and pitch, among others. However, these were not included in my list because the level of detail required to observe and analyse them is outside the scope of this study.

APPENDIX 2

LIST OF AC AND MU INSTANCES

The following are two extracts from the lists that were compiled to identify, count and analyse the AC and MU instances and the comprehension factors operating within them. Due to the volume of the lists (around 30 pages per conversation) it was not possible to append them in full.

* indicates the comprehension factors originally noted in the NNS-SR.

Extract from the list of AC instances for conversation A2

ln 36	**translation**	It's not good, but…eggs.
	intended meaning	*It [the drawing] is not good, but [these are supposed to be] eggs.*
	NNS-SR	**That's not good, but…(points to egg on drawing) egg.**
		oh, egg? [What's that got to do with anything?!]
	comprehended meaning	**That [the drawing] is not good, but [that's supposed to be an] egg.**
	CF	**That's not good, but**: lk1*
		eggs: nvc2*; int1 (nvc3)+ lk1 (NS resp)
	comments	Although NNS understood that NS tried to illustrate meaning of 'jajka' = 'eggs', she couldn't understand why NS was talking about eggs, bec. NC of 'I've started eating' and '*scrambled* eggs' means the vital topic link (scrambled eggs/eat = food = link to brown sauce and pickle) is missing. This means 1) even if a whole utterance is understood, it can still be perceived as NC if its significance (= semantic coherence) is not picked up; 2) understanding the verb is key to understanding the significance as well as the meaning of an utterance

Extract from the list of MU instances for conversation Z2

ln 36-37	translation	A flower, a small flower
	intended meaning	*[You can call it] 'flower' or 'small flower'.*
	NNS-SR	**There are flowers on it**.
	comprehended meaning	*There are flowers on it*
	CF	**[You can call it]: ----**
		flower: lk3
		small flower: ----
	comments	MU caused because NNS didn't understand that purpose of utterance was to explain vocabulary, and because 'or' (ln 24) wasn't understood.

APPENDIX 3

TRANSCRIPTS

Key to colours and symbols used in the transcripts

XXX?	Words or phrases that were not understood
XXX? in the colour of a comprehension factor (see appendix 1), followed by words in [ ]	Words or phrases that were not understood at first, but gradually became clear in the course of the utterance (e.g. **XXX?** [this year]: *context helped to gradually make clear that XXX? means 'this year'*.
black bold (in NNS speech)	Actual Polish words produced by the NNS, transcribed in English
black bold (in NS speech)	English words (e.g., "okay") and names of places and people, that remain unaltered in Polish
colour bold	Words and phrases that were understood because of one or more comprehension factors (see colours in the List of Comprehension Factors in appendix 1), e.g. **That's the veil**.: *context (red) clarified the first part, knowledge of L1 and other languages (blue) the second part of the utterance.*
colour bold / *colour bold italics*	Where more than one factor helped comprehension, the word or phrase is indicated in the colour of one of the factors, while the other factors are indicated in their respective colours and in italics after the word or phrase in question, e.g. **That's nice!** / *context: The meaning of the phrase was made clear both through tone of voice (pink) and context (red).*
"normal font in inverted commas"	Transliteration of Polish words that were not understood
[ ]	Things the NNS intended to say or was thinking
( )	Things that were happening at the time an utterance was made (e.g. gestures, actions, laughter, etc.)
[NNS:…]; [NS:…]; **bold green**	NS or NNS speech that was shown by the video footage to have been accidentally omitted from the transcription and/or the NNS-SR; in order to avoid altering the line count partway through the analysis, these omissions were not added on a separate line.
[ ]	Green square brackets indicate text omitted in the transcription but shown by the video footage to have been correctly represented in the NNS-SR.
IR	Notes from the NNS immediate recall are included where the NNS-SR is ambiguous about what the NNS understood.

.

Actual comprehension, misunderstanding, non-comprehension etc. are indicated by a coloured background:

Actual comprehension
Misunderstanding
Non-comprehension
NNS production
Non-attention
Communicative acts that were not counted because they were inaudible or the NNS-SR was ambiguous or incomplete.

Communicative acts are separated by a thick black <u>horizontal line</u>.

However, where two or more communicative acts are on the same line (e.g. line 30), the background is white regardless of the comprehension value, and they are separated by a double slash // in the Polish transcription and in the NNS-SR. If their comprehension values are different, this is indicated in the Polish transcription, using line numbers and the usual abbreviations (AC, MU, NC, PR, non-att.):

Tak, cos takiego. **//** Jeszcze będzie welon **(30a=AC;30b=MU)**

Sketches made during the conversations