'Let us prepare to grapple with the ineffable itself,
and see if we may not eff it after all.'
Douglas Adams, <u>Dirk Gently's Holistic Detective Agency</u>

1. Introduction

The study of first language attrition is currently entering its third decade. However, after more than twenty years of diligent investigation resulting in numerous theoretical and empirical papers the questions on this topic still by far outweigh the answers. Findings from individual studies seem to underscore that it cannot even be said with any certainty whether a first language in which a certain level of proficiency has been reached can ever undergo significant attrition, let alone how or why.

This paper presents a slightly different approach to the study of first language attrition from those pursued so far. It will be argued that language attrition research should focus not so much on what appears to be **lost** in the data under observation, that is, on the apparent 'errors' which are made, but on what is **retained**. In other words, it is suggested that more emphasis needs to be placed on the attempt to provide a picture of the level of proficiency the individual speaker has retained in the attriting language that is as accurate and broad as possible. What is argued here is that such a 'holistic' picture cannot be gained by approaches which focus on deviance – i.e. on 'errors' - alone.

The methodological concerns underlying this approach are not new. In research on language acquisition, the concept of 'interlanguage' (Selinker 1972) has since the early 1970s placed the focus of observation on the analysis not only of 'errors' but of all observable features which result from language-learning strategies (Appel & Muysken 1987:83). For language attrition, too, this viewpoint was suggested as a profitable one at an early stage: One of the first collection of papers on the study of language attrition (Lambert & Freed 1982) contained a paper which was labeled 'A blueprint for research' (Andersen 1982), making the claim that

> [l]anguage attrition is a special case of variation in the acquisition and use of a language or languages and can best be studied, described, documented, explained, and understood within a framework <u>that includes all other phenomena of language acquisition and use</u> (Andersen 1982:86, my emphasis).

Andersen then proceeded to enumerate hypotheses to be tested and demands to be fulfilled by language attrition research. Unfortunately, no study to date could claim to have applied this very useful methodological framework in an attempt to give a holistic view of the process of

language attrition. Such an approach would be a valuable contribution to the study of language attrition at large, and following Andersen's suggestions is a necessary prerequisite to finding an answer to the question of whether there exists such a phenomenon as first language attrition.

2. Methodological issues in the study of first language attrition

The unspoken assumption that language attrition leads to a diminished ability to perform certain linguistic tasks, and that this reduction can best be measured on the basis of 'errors', has been the basis of practically all language attrition studies done so far. However, it has been pointed out that there is great variance in the amount of 'attrition' that different researchers claim to have found (see e.g. Köpke 1999:94-104). Köpke ascribes these divergences partly to the linguistic levels which were analyzed, since lexical attrition has generally been found to outweigh attrition on the phonological and morphosyntactic levels, and partly to the analysis and weighing of 'errors' (Köpke 1999:103f.). A further complication is the obvious difficulty of making comparisons between attrition phenomena on different linguistic levels – can we actually 'weigh' the disruption caused by a change in Voice Onset Time as opposed to a reduction in plural allomorphy or the loss of a certain number of lexical items?

That notwithstanding, it has generally been assumed that the higher degree of attrition often found on the level of the lexicon, as well as the fact that this area seems to be the first to be affected in the process of attrition, implies that this linguistic level is more vulnerable to attrition than the grammatical system. However, it has to be taken into consideration that it is only in the area of the lexicon that attempts to paint the full picture of an individual's repertoire have so far been made, usually on the basis of picture naming or verbal fluency tests (Ammerlaan 1996; Hulsen 2000; Schoenmakers-Klein Gunnewiek 1998; Waas 1995; Yağmur 1997).[1]

It is possible that such tests are more sensitive to detecting problems than the 'error'-focussed techniques generally used to assess attrition of the grammatical system. However, they cannot a priori be assumed to be a valid instrument in assessing adult non-pathological language loss: While the validity of fluency tests in assessing verbal retrieval difficulties has been demonstrated in adult aphasics (Goodglass & Kaplan 1983), these tests were shown not to be an adequate tool to assess such difficulties in normal vs. language disordered children by Hall

& Jordan (1987), who conclude that "word-finding problems may be symptoms of a variety of language problems and therefore elude any single identification technique" (Hall & Jordan 1987:109). Verbal fluency tests cannot, therefore, <u>a priori</u> be assumed to be a valid instrument in assessing adult non-pathological language loss. It has also not been demonstrated whether the results of such tests correlate with difficulties the subject encounters in the production of unguided discourse. It would therefore be desirable for language attrition studies to include further data, obtained through less formal tests, in order to arrive at a realistic assessment of the range of the lexicon which is retained.

In contrast to the study of lexical attrition, research on language attrition on the grammatical level has so far been confined to the analysis of 'errors'. Some scholars used spontaneous or elicited narratives or story-retellings (Bolonyai forthc.; de Bot & Clyne 1994; Leisiö 2001; Schmid 2002; Søndergaard 1996), while others analyzed data elicited through translations, grammaticality judgements or explicit grammatical tasks, e.g. presenting a noun in the singular and asking the informant to provide the plural (Altenberg 1991), or presenting a number of linguistic items in scrambled word order which the informant had to use to build a sentence (Yağmur 1997; Köpke 1999; Grosjean & Py 1991; Hirvonen 1995; Jordens et al. 1986, 1989; Schoenmakers-Klein Gunnewiek 1998). Some studies combined free and elicited data (Polinsky 1994; de Bot et al. 1991; Köpke 1999).

It has not, so far, been investigated in what way conflicting results on the amount of attrition which different studies claim to have found are linked to the methodology of collecting and analyzing data. However, the distinction between the use of free and elicited data is an important one, especially in studies which focus on 'errors'. It has been demonstrated in first language acquisition studies that elicited data often contain a number of 'errors' which dramatically exceeds that found in free discourse (e.g. Clahsen et al. 1990:112). Moreover, since most of the studies of grammatical attrition do not establish a non-attrited control group (the exceptions being Köpke (1999), Schoenmakers-Klein Gunnewiek (1998) and Yağmur (1997)), accounts of 'massive' attrition in findings based on elicited data alone may need to be re-evaluated.

Furthermore, the predominant focus which all of these studies have placed on analyzing 'errors' appears problematic for three reasons. The first of these is concerned with establishing what a 'mistake' is: Most researchers seem to have relied exclusively on their own judgement as a native or proficient speaker of the language under investigation (with the

---

[1]   A slightly different approach was taken by Olshtain & Barzilay (1991), who used re-tellings of the frog-story picture book in order to ascertain whether language attrition would lead to less accurate specificity of

exception of Köpke (1999) and Schmid (2002) who used several judges and counted as 'errors' only those instances that were objected to by at least two of the judges, and Polinsky (1994), who consulted native speakers and modern grammars of the languages under observation). This is further complicated by the fact that no study (with the exception of Schmid (2002)) has used speakers from a homogenous dialectal and sociolectal background. It is therefore to be called into question whether instances that are perfectly acceptable in the attriter's target L1 dialect or sociolect may not have been rated as 'errors' due to the researchers imperfect command of that variety.[2]

A second issue is the base-line for comparison. Often, any and all deviations that are present in the data are considered to be evidence for 'attrition', without taking into account a) the distribution of such 'errors' in unattrited data of a comparable nature and b) the distribution of the feature in question as it occurs in the data at large. Such accounts tacitly assume non-attrited language use to be 'error'-free, a scenario which very obviously is incorrect. Furthermore, if the number of 'errors' found in the data are not related to the number of obligatory contexts for the same linguistic feature, it is not possible to gain an impression of how seriously attrition has disrupted speech production.

Thirdly and arguably most importantly, an account of language attrition which focuses exclusively on 'errors' cannot deal with avoidance strategies. The possibility that speakers who are aware of their reduced proficiency may achieve ways not to use linguistic features that they are uncertain about has been pointed out at an early stage of language attrition research (Andersen 1982:99ff. et passim). The absence of 'errors' on a certain linguistic variable in the data from an attriter may therefore not license the conclusion that she has preserved this variable, but simply that she does not use this linguistic structure any longer - out of insecurity, perhaps, or for other reasons.[3]

The following sections will illustrate how adopting a broader perspective on language attrition can resolve some of these theoretical and methodological issues.

3. Methodology

3.1 The data

This paper takes the results of a study of adult L1 attrition of German among a group of 35 German Jews who emigrated from Germany between 1933 and 1939 as its point of departure.

---

semantic meaning.
[2]   On a personal note, I have never seen any study of the attrition of any language that I am proficient in which did not include examples of 'errors' that I would not have objected to.
[3]   Such avoidance strategies on the part of speakers who feel insecure have been found to obtain in L2 acquisition as well, where only the more proficient speakers 'dared' to use certain structures, even though all speakers under investigation had manifestly been taught them in the classroom (Dewaele & Regan in press).

All these informants were born and grew up in the city of Düsseldorf in a monolingual German environment, until the time of their emigration to anglophone countries, when they were between 11 and 30 years old.

The corpus consisted of narrative autobiographical interviews which had been collected by the Mahn- und Gedenkstätte Düsseldorf, the Holocaust Memorial Center of the city of Düsseldorf, for Oral History documentation. This corpus, consisting of some 175,000 words of free spoken German discourse[4], was further augmented by a self-report questionnaire on language use, proficiency, and attitudes which the informants filled out at a later date. For each informant, furthermore, a rating of his or her apparent proficiency was established on the basis of the judgements of 13 native speakers of German, who, after having listened to extracts of ca. 1 minute from each interview, were then asked to listen to the same extracts again and 'rate' each speaker on a scale of 1 (perfectly native-like) to 3 (definitely not a native speaker).[5]

Schmid (2002) conducted an analysis of this corpus both for 'mistakes' ('interference data') on the level of German morphology and syntax and for 'repertoire' ('proficiency data'), i.e. lexical, morphological and syntactic richness and complexity (for a more detailed description of these features see below). These values were correlated with several extralinguistic variables, such as age at the time of emigration, language use with different generations of family members (on the basis of self-report data) and the native language of the partner or spouse. It was found that none of these factors consistently influenced the speaker's L1 attrition, either in the interference or in the proficiency data (Schmid 2002:175; 186).

Given the nature of the persecution the informants had been subjected to, and the fact that these crimes were perpetrated by a majority which spoke the same L1 as they did, Schmid (2002) further looked at the effect that 'traumatization' might have had in this context. It was hypothesized that exposure to more severe degrees of persecution might increasingly have lead to the wish for distance from the speaker's German background and identity, and that this trauma might have adversely affected L1 maintenance. Based on assumptions on the role of attitude and motivation in both L2 acquisition and language loss (Gardner & Lambert 1972; Gardner 1982) a further extralinguistic variable was therefore established, which attempted to

---

[4] English items and stretches of discourse are not included in this count, nor are the contributions of the interviewer.

[5] As was noted above, it would be desirable for language attrition studies to combine free with elicited data. However, administrating 'language proficiency tests' to the informants for this study was considered out of the question, since the German language was so obviously (and understandably) an extremely sensitive issue for many of the speakers.

measure the degree of the speakers' identification with or distance from Germany and the German language.

This variable is based on well-established historical frameworks which divide the National-Socialist persecution of Jews (and other minorities) into clearly distinguishable phases, between which the severity of persecution increased dramatically, both quantitatively and qualitatively (cf. e.g. Hilberg 1961; Walk 1981).

The first of these phases began with the Nazi seizure of power on January 31st 1933 and continued until Sept. 15th 1935, when the Nuremberg racial laws were announced. Until that time, anti-Semitic actions consisted mainly of (enforced) boycotts of Jewish businesses and restrictions which were placed on certain professions (e.g. doctors or lawyers) and educational institutions. The Nuremberg laws then extended persecution into private life, prohibiting marriages and relationships between Jews and non-Jews and furthermore for the first time giving a definition of who was to be considered a Jew. This provided the legal basis for a host of petty (and not so petty) regulations on both the national and the regional level, increasingly restricting Jewish life almost by the day. The third phase, when it became clear that there was an immediate threat to physical integrity and life on a large scale, and that homes and families were no longer safe from brutalization, plunder and murder, began with the pogrom that has become known as the 'Reichskristallnacht' on Nov. 9th, 1938. (For a more detailed description see Schmid 2002:chapter 2).

The informants were thus divided into three groups, according to the time at which they had emigrated: EMIGRA1 (n=7, mean age at emigration 16.3 years) emigrated between Jan. 1933 and Sept. 1935, EMIGRA2 (n=14, mean age at emigration 17.3 years) between Oct. 1935 and Oct. 1938, and EMIGRA3 (n=14, mean age at emigration 18.9 years) between the pogrom and the beginning of World War II.

3.3 Analysis

Interference data

The first step in the analysis used by Schmid (2002) was to follow the road that virtually all attrition studies conducted earlier had gone down, namely to look at 'errors' or interferences. The number of 'errors' which informants had made in the data was assessed by an analysis of all interviews by the author and one of several student assistants in the dept. of English Linguistics, University of Düsseldorf, Germany. Instances that were objected to by both judges were counted as interferences. A taxonomy of these interferences was then developed (see Schmid (2002):ch. 3.4.1). For the purpose of the present investigation, the analysis will be confined to the following seven morphosyntactic variables:

Morphological variables:

- Case marking (CAS)
- Gender agreement (GEN)
- Plural allomorphy and agreement (PLU)
- Verb phrase morphology (VP)

Syntactic variables – verb placement:

- V2 placement in main clauses (V2)
- discontinuous word order in main clauses (DWO) (i.e. structures where the non-finite part of the verb is extraposed to the end of the clause)
- verb-final placement in subordinate clauses (SUB)

The statistical analysis in Schmid (2002) showed that informants from groups who had emigrated at a later time did make more 'errors' on six out of seven of the linguistic variables under analysis, and that furthermore, their apparent proficiency was rated lower by the native speaker judges (see Schmid, 2002:175; 186).

Proficiency data

As was noted above, studies of language attrition have so far consistently based their analysis exclusively on the 'errors' committed by their attriters. However, considering that the 'errors' in the material from the group who had apparently suffered the highest degree of attrition, EMIGRA3, only total some 7.4 per 1,000 spoken words in the areas of morphosyntax, it seems clear that such approaches neglect a vast amount of the data speakers actually produce – all that which did not 'go wrong'. Any study aiming at describing the linguistic variety produced by a process of language attrition, which in itself is nothing more than a situation of language contact, cannot afford to neglect evidence for what the actual repertoire the speakers have retained is composed of. Such an approach not only makes it possible to account for the amount of 'errors' found on the basis of avoidance strategies - since a speaker who felt insecure about a certain linguistic feature might avoid it altogether and thus not make any mistakes on it – but also on the basis of more general principles of language contact and language change. It is possible, for example, that speakers might develop a preference for straightforward SVO structures with no topicalization and no embedded clauses – and thus on the individual level undergo a process of linguistic change. It was therefore decided to take a closer look at the lexical and morphosyntactic complexity that was evident from the spoken data not where it went wrong but where it went right, and to see whether the analysis of language attrition could benefit from this.

Lexicon

Where attrition in the area of the lexicon is concerned, it has been predicted that, compared to linguistically competent individuals, attriters will have a smaller number and smaller variety of lexical items available to them, and that, furthermore, those items retained will consist of common and highly-frequent items (Andersen 1982:94).

In order to establish the range of the lexicon which the attriters under observation here retained after 60 years in English-speaking countries, a stretch of text of exactly 1,000 German words was collected from each interview.[6] All items in this corpus, which thus contained some 35,000 word, were reduced to their lexicon entry form and classified as to word type. Proper names and ordinal numbers were eliminated from the count.

For the purpose of assessing lexical richness, first a type-token index of the content words (nouns, verbs, adjectives) was established (TTF). The frequency of each of these items in unattrited data (FREQ) was then assessed on the basis of two frequency dictionaries of German: Meier (1967) and Ruoff (1981), so that for each speaker the mean frequency of the lexical items used could be established.[7]

Morphology

Where language attrition in the domain of morphology is concerned, the following predictions have been made, based on observations from language contact, language change, and language/dialect death:

- loss of oblique cases
- loss of gender marking and the adjective/noun congruence
- reduction in allomorphic variation
- a movement from inflectional devices and allomorphic variation towards more regularized or analytic forms
- a trend towards periphrastic constructions (e.g. from an inflected future tense to a go-future)
- grammatical relations tend to be encoded less by bound morphemes and more by lexemes

(cf. Andersen 1982; Hagen & de Bot 1994; Maher 1991).

---

[6]   English items, hesitation markers, repetitions, and false starts were eliminated from this stretch of text. The only interview which contained less than 1,000 words (814 words) was analysed in its entirety.

[7]   The choice to exclude function words was based on the observation that the average frequency of these, as they occurred in the corpus, was more than sixteen times as high as that of lexical words (based on Meier 1967). It was therefore assumed that stylistic differences among speakers, as, for example, a preference for the periphrastic past, would distort the overall picture if auxiliaries and other function words were to be included in the count.

In order to assess whether any of these processes were present in the data under observation, the same stretch of 1,000 spoken German words from each interview was analyzed for the following features:

- Case marking of NPs

  Where German case marking is concerned, it has been predicted that the system will first be reduced to a two-case one, through loss of the dative.[8] If the system is reduced even further, the accusative, too, may be underused, leading eventually to a no-case system (Jordens et al. 1989:181f.). First of all, an overuse of the nominative and the accusative is therefore expected in the data from groups with more severe attrition, with a more strongly marked preference for the nominative by those speakers who have suffered the highest degree of loss.

- Gender of NPs

  It has been suggested that speakers of German for whom English is becoming the dominant language may show a preference for the neuter gender due to interlanguage effects – English nouns referring to inanimates being almost invariably neutral - a preference for the masculine, which is often considered 'unmarked' (e.g. Greenberg 1966, such a preference was also found in L2 learners of French by Dewaele & Véronique (2000)) or even for the feminine, which Clyne observed to be overused in English loanwords (Clyne 1981:18).

- Singular vs. plural NPs

  Since plural allomorphy in German is highly complex and largely opaque, the plural of NPs was hypothesized to be an area where early loss of allomorphic variation might be encountered.[9] A second possibility in which such a reduction could manifest itself would be that plural forms are generally dispreferred by attriters. In order to test this hypothesis, the distribution of singular and plural NPs in the data under observation was assessed

- Synthetic vs. periphrastic tenses

  German has two synthetic tenses, the Present and the Preterite, which encode tense solely by inflection, and four periphrastic tenses, the Perfect, the Pluperfect, Future I and Future II, which combine inflection with an auxiliary. Predictions on language attrition and change include a trend away from synthetic and towards periphrastic constructions

- Word classes: lexical vs. function words

---

[8] The genitive occupies a special position and will not be discussed here.

[9] This hypothesis was tested on the interference data, where the results did not, however, yield evidence for a preference for any plural allomorph.

A preference for the encoding of grammatical relations by free morphemes instead of by inflection, as it has been predicted for the process of language attrition, would lead to a change from a synthetic to a more analytic grammatical structure. If such a preference obtained for more linguistic variables than the tense system, this would lead to an increased proportion of grammatical words. All items occurring in the data stretches under observation were therefore classified as lexical (nouns, adjectives, full verbs) or grammatical (adverbs, articles, prepositions, (modal) auxiliaries, etc.).[10]

Syntax

Like many other Germanic languages, German has what has been described as mixed word-order, main clauses being obligatorily verb-second, while subordinate clauses are verb-final. The propensity towards verb-last placement is also evident in main clauses in the structure known as 'discontinuous word order', i.e. structures of the type (X)-V_{FIN}-Y-V_{INF} (DWO). The area of German word order is often a difficult one for second language learners, who tend to analyze it at first sight as being SVO and only gradually correct this impression (Clahsen et al. 1983; Du Plessis et al. 1987). A possible scenario for the attrition of L1 German in interaction with L2 English would therefore be a preference for a straightforward SVO word order, that is, for main clauses with little topicalization of non-subject items which would require the subject to be placed in postverbal position, and a lower than average number of verb final subordinate clauses. This hypothesis is also in line with Andersen's prediction that a language attriter will have a smaller repertoire of syntactic structures, with a tendency to overuse such structures which more transparently reflect underlying and semantic relations (Andersen 1982:99).

The data were therefore analyzed for the distribution of main clauses (MC) and subordinate clauses (SUB). Furthermore, main clauses were classified as SV vs. XVS-structures, as well as discontinuous word order structures (DWO). For these features, the previous strategy of confining the analysis to a stretch of 1,000 words from each interview was abandoned in favor of an analysis of each interview in its entirety.

However, the analysis of the lexical and morphosyntactic richness of the spoken data was, again, inconclusive (see Schmid, 2002:186). In other words, while informants who had emigrated at a later date made more 'errors' on virtually all variables that were tested for, and

---

[10] The complexity of controversy on the classification of lexical vs. function words is well noted (cf. e.g. Brinton 2000). A discussion of these issues would be far beyond the scope of the present article, it was therefore decided to adopt a basic approach to this classification which was considered the most powerful for the question under investigation, since it classifies most items that can bear inflectional morphemes as lexical, while classifying those items that could potentially substitute such affixes as grammatical.

were furthermore rated as less 'native like' (p <.01) than those who had left earlier, there was no difference between groups in overall morphosyntactic complexity.

These findings allowed for three possible scenarios: On the one hand, there was the possibility that the linguistic proficiency of all informants had not changed at all since emigration, i.e. that some informants had developed a sense of insecurity in their L1 which was in itself the source of the 'errors', but that their actual knowledge of German was as rich and complex as at the time of their emigration. The second possible scenario was that all informants had lost German at a similar rate, but that some of them were able to 'mask' this loss in their interaction. And thirdly, it was hypothesized that there might be a difference between the groups after all, which did not show up in the between-group analysis, but which a comparison with a non-attrited control group might reveal.

3.3 Control group

In order to test which of these scenarios obtained, it was decided to conduct the present study, which establishes a monolingual control group against which the data gathered on the (assumed) language attriters can be evaluated.

The issue of establishing a point of reference in language attrition studies is an extremely complex and controversial one. The two possibilities appear to be longitudinal investiagations monitoring and measuring a gradual loss in proficiency, i.e. the comparison of findings from one group at different points in time, as opposed to *static group* comparisons which investigate findings from an attriting group against that of a control group in the home country (Jaspaert, Kroon & van Hout 1986). However, longitudinal designs do not seem feasible for this particular area of linguistic investigation due to the very long time span during which the gradual process of attrition develops and which would necessitate an impractically long period of research. Furthermore, going back to test the same group of attriters at regular intervals may result in a training effect that will effectively counteract the attritional process it intends to measure.

However, establishing a control group is also anything but straightforward. On the one hand, emigration is a very disruptive event that can influence other sociolinguistic factors – social status, income etc. – quite dramatically; so attempting to match groups for all criteria except exposure to an L2 environment is probably never possible.[11] Furthermore, again due to the long period of time involved, it is impossible to exclude the possibility of language change in the country of origin. In this case there is the danger of labelling something as 'loss' which is,

in reality, the manifestation of an earlier stage of the spoken language preserved in the emigrant speech.

Keeping these issues in mind, it was decided to settle for a spoken corpus which made a compromise between the state of the language at the time of emigration (the 1930s) and at the time of data collection (the mid-90s). Such data were found in the <u>Phonai</u>-corpus of spoken data, collected by the <u>Institut für deutsche Sprache</u> in the 1960s (Pfeffer 1984). From this corpus, 10 interviews (totaling some 15,000 words) were selected which conformed to the following criteria:

- Speaker older than 60 years (except for one speaker who was 56 at the time of the interview)
- Speaker of a variety from North-Western Germany.
- Topic of interview is the interviewee's profession or hobby, i.e. a narrative situation which is similar to those of the original corpus.[12]

4. Results

4.1 Interference data

In order to assess to what degree the number of 'errors' made by the individual emigration groups differed from unattrited speech, t-tests were conducted to compare the number of 'errors' (standardised to 1,000 spoken German words) on these seven features for each individual emigration group with the data collected from the control group.

The findings from these tests are summarized in table 1:

Table 1:   Interference data (t-test comparison with control group, one-tailed; group averages for number of errors per 1,000 spoken words[13])

	CAS	GEN	PLU	VP	V2	DWO	SUB
EMIGRA1 (n=7)	0.42	0.24*	0.10	0.58	0.20	0.26	0.12
EMIGRA2 (n=14)	0.48	0.45**	0.18	0.77	0.45	0.38	0.34
EMIGRA3 (n=14)	1.31*	0.53**	0.38	1.35*	0.58*	0.44*	0.35

---

[11]   This was certainly the case with the group of speakers investigated here, many of whom were forced to abandon their formal education in Germany due to Nazi persecution and exclusion measures, and had to accept work that they were dramatically overqualified for in their country of emigration.

[12]   Specifically, the following interviews were selected: ar04, bl06, br07, bs07, cg09, cm10, cq10, dc11, ii28, ip28.

[13]   In order to give an impression on the overall frequency of 'errors', this table gives the group average number of interferences per 1,000 words. The decision to relate the number of interferences to the total number of words produced instead of to the number of obligatory contexts for each feature was taken in order to facilitate comparisons with the numbers of 'errors' given by other studies on language attrition.

Control (n=10)	0.75	0.08	0.23	0.15	0.45	0.23	0.60

*: $p \leq .05$; **: $p \leq .01$

These findings point towards the conclusion that EMIGRA1 and EMIGRA2 have undergone little or no attrition, the only area where there is a significant difference from the control group data being gender agreement. EMIGRA3, on the other hand, seems to have been affected by attrition on most of the linguistic features under observation.

4.2 Proficiency data

Tha analysis of the proficiency data collected revealed a picture that is consistently different from that obtained by the interference data.

Table 2:   Proficiency data (t-test comparison with control group, one-tailed)

Variable		EMIGRA1 (n = 7) Mean	Ω^2	EMIGRA2 (n = 14) Mean	Ω^2	EMIGRA3 (n = 14) Mean	Ω^2	Control (n = 10) Mean
Lexicon								
	TTF	3.59*	0.330	4.03**	0.609	3.98**	0.589	2.98
	Mean fr.	7.85		9.26*	0.229	8.30*	0.138	7.15
Morphology:								
	Nom %	51.37		55.75**	0.385	55.38**	0.288	47.62
Cases	Dat %	22.11		22.73		20.73		23.64
	Acc %	24.90		20.45**	0.259	22.68		24.60
	Fem. %	38.37		38.19		36.84		39.31
Gender	Masc. %	38.68		36.81		36.60		32.39
	Neut. %	22.95		25.00		26.55		28.30
	Sg. %	77.05*	0.303	77.10*	0.166	77.14**	0.243	70.88
	% Synthetic tenses	76.74		69.37**	0.306	63.10**	0.552	82.34
Word	Lexical words	405.14		380.71		399.5		390.70
classes	Function words	530.14		548.93		545		541.5

	EMIGRA1 (n = 7)	EMIGRA2 (n = 14)		EMIGRA3 (n = 14)		Control (n = 10)
Syntax						
Main clauses	97.72	114.71**	0.456	118.02**	0.470	82.66
SV-main clauses	75.33	79.62**	0.252	90.24**	0.464	56.02
VS main clauses	22.39	35.09		27.77		26.64
DWO	29.40	39.17**	0.412	39.94**	0.432	25.70
Sub	26.14	20.50*	0.183	19.13*	0.209	32.44

*: p <.05, **: p,.01

Lexicon

All emigration groups have a type-token ratio which exceeds that of the control group. This finding is corroborated by the mean frequency of the lexical items used by the 'attriters', which – except for EMIGRA1 - is also higher than that for speakers of the control group. The Ω^2 levels suggest that emigration date is a very good explanatory factor indeed for the higher type-token ratios of all emigration groups, as well as for the increased mean frequency of EMIGRA2 and EMIGRA3.

It therefore appears that language attrition on the level of the lexicon first manifests itself by a preference for certain lexical items, indicated through a higher type-token ratio, but that this preference is not or only to a small degree affected by the overall frequency of these words. It is only as the attritional process increases that more common and more frequent items become consistently overused, as was predicted by Andersen (1982:94).

Morphology

In the area of morphology, there are two rather striking observations to be made. First of all, if the data are contrasted with the interference data, we can see that the only feature on which all groups had consistently more errors than the control group, namely gender marking, is also one of the few features where no group shows a difference in overall distribution. Similarly, the only area where no group has a significantly higher number of interferences, namely the plural, is also the only feature that all groups consistently seem to be avoiding. Furthermore, the prediction that a higher degree of attrition will lead to an overuse of the nominative case and of periphrastic tenses are borne out by the data from EMIGRA2 and EMIGRA3, but there nevertheless is no consistent overuse of function words among any of the emigration groups.

<u>Syntax</u>

It is evident that the distribution of XVS main clause structures does not differ from that of the control group for any of the attriters (this finding corroborates Håkansson's (1995) data on L1 attrition of Swedish, where a similar V2 rule obtains). However, there is an underuse of subordinate clauses by EMIGRA2 and EMIGRA3, which is compensated for by the overuse of main clauses and DWO structures. Apparently, therefore, while the tendency for verbs to appear clause-finally in German is stable in language attrition, as is the V2 rule, attriters gradually begin to avoid the complexities associated with using embedded clauses. This assumption is further strengthened by the fact that the average length of DWO and SUB structures is shorter for all emigration groups in comparison with the control group (see table 3).

Table 3:   Length of DWO and SUB structures (t-test comparison with control group, one-tailed)

	Av. length of DWO[14]	Ω^2	Av. Length of SUB[15]	Ω^2
EMIGRA1	5.49*	0.22	6.90*	0.19
EMIGRA2	5.13**	0.34	5.79***	0.43
EMIGRA3	5.20**	0.32	5.92***	0.36
Control	6.42		7.85	

*: $p < .05$; **: $p < .01$; ***: $p < .001$

Again, the findings from the proficiency data go some way towards explaining the interference data: the fact that none of the emigration groups has an increased number of interferences on verb placement in subordinate clauses in comparison with the control group may in part be due to a diminished use of such structures, both in frequency and length.

5   Discussion

The analysis of the interference data presented under 4.1 revealed no differences between the number of 'errors' found in the data from EMIGRA1 and EMIGRA2 and that of the control group (with the exception of incorrect gender agreement). Based on a count of 'errors' alone, this study would therefore have had to conclude that these two groups had suffered little or no attrition on the morphosyntactic level. However, the results from proficiency data provide a number of further angles to this picture.

---

[14]   Based on a word count including all items from the finite to the non-finite part of the verb.
[15]   Based on a word count including all items from the subordinator to the verb.

In the area of the lexicon, all emigration groups show striking reduction. This finding corroborates Andersen's hypothesis that "[t]he first area is that of quick retrieval of appropriate vocabulary and idiomatic phasing in on-going speech production." (Andersen 1982:114). Where morphology is concerned, the repertoire of EMIGRA1 seems not to have been affected a great deal, the only area which is affected being the singular-plural distinction, where significant underuse of the plural was found.[16] The use of morphology by EMIGRA2 and EMIGRA3, on the other hand, corroborates the predictions made for the attritional process in most areas which were investigated.

Where syntax is concerned, the distribution of sentence structures in the data from EMIGRA1 is again no different from that of the control group, while EMIGRA2 and EMIGRA3 use XVS- and V-final-structures in a target-like way, but show a marked preference for main clauses and a dislike for embedded structures – again corroborating Andersen's predictions. Furthermore, the sentence structures used by all emigration groups are shorter than those found in the data from the control group.

The findings from the proficiency data on a number of linguistic features – gender, plural, and word order – provided further explanation for the interference data: for those features where little or no difference between the amount of interferences in the data from the attriters and from the control group could be found, the proficiency data showed that the use of the feature itself had become restricted and vice versa. The possibility that avoidance strategies have been developed is thus a factor which needs to be taken into account by language attrition studies.

In sum, we can see that the 'attriters' who supplied the data for this study can clearly be divided into three groups which are located on a cline of decreasing proficiency – a fact that is evident, among other things, by the differences in native speaker ratings (Schmid 2002:188). It is probably legitimate to say that EMIGRA1, after more than sixty years of living in an anglophone country, seems to have preserved their L1 to an astonishing degree, while EMIGRA3 has undergone considerable loss. Since Schmid (2002) established that none of the other extralinguistic factors which were looked for in this context (age at emigration, interim use of the language) consistently accounted for what attrition was evident, the assumption that

---

[16] Interestingly, this finding contradicts another of Andersen's hypotheses, namely that "[m]orphological distinctions with a high functional load (where loss of distinctions would result in frequent loss of information) in lg. X will be maintained" (Andersen 1982:97). Of all categories investigated among the morphological variables, the singular-plural distinction certainly has the highest communicative load. Since this specific hypothesis of Andersen's presupposes a very high degree of metalinguistic awareness on the part of the attriter, the fact that there is no evidence here to support it is not all that surprising.

this loss is connected with a high degree of traumatization and the resulting wish for distance from the L1 seems a strong one.

Interestingly, it has become evident that, if the analysis of grammatical attrition in the present study been confined to 'errors' observable in the data under investigation alone, the findings would have been similar for the group with the highest degree of language maintenance, EMIGRA1, for which little attrition has been detected both from the interference and from the proficiency data. In the same vein, the data from group with the highest degree of attrition, EMIGRA3, show evidence for language loss in both areas. It is where the intermediate speakers from EMIGRA2 are concerned that the necessity of analyzing proficiency data becomes obvious: while the data from this group do not contain more grammatically deviant structures than the control group data, the statistical analysis revealed the overall repertoire to be as reduced as that of EMIGRA3. These speakers, therefore, have to be classified as attriters who can disguise their diminished competence through avoidance strategies – and this is a manifestation of attrition that will not be detected if the analysis is restricted to 'errors'.

References

ALTENBERG, EVELYN P. 1991. Assessing first language vulnerability to attrition. Seliger and Vago (eds.), 189-206.

AMMERLAAN, TOM. 1996. 'You get a bit wobbly...' Exploring bilingual lexical retrieval processes in the context of first language attrition. Nijmegen: Katholieke Universiteit dissertation.

ANDERSEN, ROGER W. 1982. Determining the linguistic attributes of language attrition. The loss of language skills. Lambert and Freed (eds.), 83-118.

APPEL, RENE and PIETER MUYSKEN. 1987. Language contact and bilingualism. London: Edward Arnold.

BOLONYAI, AGNES. forthc. L1 attrition of verbal morphology in bilingual children and adults, to appear in: Second Language Research Forum.

BOT, KEES DE and MICHAEL CLYNE. 1994. A 16 year longitudinal study of language attrition in Dutch immigrants in Australia. Journal of Multilingual and Multicultural Development 15:1.17-28.

BOT, KEES DE, PAUL GOMMANS, and CAROLA ROSSING. 1991. L1 loss in an L2 environment: Dutch immigrants in France. Seliger and Vago (eds.), 87-98.

BRINTON, LAUREL. 2000. Grammaticalization versus lexicalization reconsidered: On the *late* use of temporal adverbs. Plenary lecture at the Eleventh International Conference on English Historical Linguistics, Santiago de Compostela (Spain), September 2000.

CLAHSEN, HARALD, JÜRGEN MEISEL, and MANFRED PIENEMANN. 1983. Deutsch als Zweitsprache: Der Spracherwerb ausländischer Arbeiter. Tübingen: Narr.

CLAHSEN, HARALD, MONIKA ROTHWEILER, and ANDREAS WOEST. 1990. Lexikalische Ebenen und morphologische Entwicklung: Eine Untersuchung zum Erwerb des deutschen Pluralsystems im Rahmen der Lexikalischen Morphologie. Linguistische Berichte Supp. 3.105-126.

CLYNE, MICHAEL. 1981. Deutsch als Muttersprache in Australien: Zur Ökologie einer Einwanderersprache. Wiesbaden: Franz Steiner.

DEWAELE, JEAN-MARC and VERA REGAN. In press. The use of colloquial words in advanced French interlanguage. EUROSLA Yearbook 2001, ed. by S. Foster-Cohen/A. Nizegorodcew. Amsterdam: John Benjamins.

DEWAELE, JEAN-MARC and DANIEL VÉRONIQUE. 2000. Relating gender errors to morphosyntactic and lexical systems in advanced French interlanguage. Studia Linguistica 54:2.212-24.

DUPLESSIS, JEAN, DOREEN SOLIN, LISA TRAVIS, and LYDIA WHITE. 1987. UG or not UG, that is the question: A reply to Clahsen and Muysken. Second Language Research 3:1.56-75.

GARDNER, ROBERT C, and WALLACE E. LAMBERT. 1972. Attitudes and motivation in second Language learning. Rowley, MA: Newbury House.

GARDNER, ROBERT C. 1982. Social factors in language retention. Lambert and Freed (eds.), 24-43.

GOODGLASS, HAROLD, and EDITH KAPLAN. 1983. The assessment of aphasia and related disorders. Philadelphia: Lea & Febiger.

GREENBERG, JOSEPH. 1966. Language universals. With special reference to feature hierarchies. The Hague: Mouton.

GROSJEAN, FRANÇOIS, and BERNARD PY. 1991. La restructuration d'une première langue: L'intégration de variantes de contact dans la compétence de migrants bilingues. La Linguistique 27:2.35-60.

HAGEN, ANTON M, and KEES DE BOT. 1990. Structural loss and levelling in minority languages and dialects. Sociolinguistica 4.136-49.

HÅKANSSON, GISELA. 1995. Syntax and morphology in language attrition: a study of five bilingual expatriate Swedes. International Journal of Applied Linguistics 5:2.153-71.

HALL, PENELOPE K, and LINDA S. JORDAN. 1987. An assessment of a controlled association task to identify word-finding problems in children. Language, Speech, and Hearing Services in Schools 18.99-111.

HILBERG, RAUL. 1961. The destruction of the European Jews. Chicago: Quadrangle Books.

HIRVONEN, PEKKA A. 1995. Phonological and morphological aspects of Finnish language attrition in the United States. Soziolinguistische Variation, ed. by Wolfgang Viereck, 181-93. Stuttgart: Steiner.

HULSEN, MADELEINE. 2000. Language loss and language processing. Three generations of Dutch migrants in New Zealand. Nijmegen: Katholieke Universiteit dissertation.

JORDENS, PETER, KEES DE BOT, and HENK TRAPMAN. 1989. Linguistic aspects of regression in German case marking. Studies in Second Language Acquisition 11:2.179-204.

JORDENS, PETER, KEES DE BOT, CHARLES VAN OS, and JOS SCHUMANS. 1986. Regression in German case marking. Language attrition in progress, ed. by Bert Weltens, Kees de Bot and Theo van Els, 159-76. Dordrecht: Foris.

KÖPKE, BARBARA. 1999. L'attrition de la première language chez le bilingue tardif: implications pour l'étude psycholinguistique du bilinguisme. Toulouse: Université de Toulouse-Le Mirail dissertation.

LAMBERT, RICHARD D, and BARBARA F. FREED (eds.). 1982. The loss of language skills. Rowley, MA: Newbury House.

LEISIÖ, LARISA. 2001. Morphosyntactic convergence and integration in Finland Russian. Tampere: University of Tampere dissertation.

MAHER, JULIANNE. 1991. A crosslinguistic study of language contact and language attrition. Seliger and Vago (eds.), 67-84.

MEIER, HELMUT. 1967. Deutsche Sprachstatistik, Vol. I. Hildesheim: Georg Olms.

OLSHTAIN, ELITE and MARGARET BARZILAY. 1991. Lexical retrieval difficulties in adult language attrition. Seliger and Vago (eds.), 139-50.

PFEFFER, JAY ALAN (ed.). 1984. Textkorpora 1. Grunddeutsch - Texte zur gesprochenen deutschen Gegenwartssprache. Überregionale Umgangssprache aus der Bundesrepublik Deutschland, der Deutschen Demokratischen Republik, Österreich und der Schweiz. (Vol. 28-30 of: PHONAI. Lautbibliothek der deutschen Sprache, ed. by Institut für deutsche Sprache). Tübingen: Max Niemeyer.

POLINSKY, MARIA. 1994. Strucutral dimensions of first language loss. Chicago Linguistic Society 30.257-76.

RUOFF, ARNO. 1981. Häufigkeitswörterbuch gesprochener Sprache. Tübingen: Max Niemeyer

SCHMID, MONIKA S. 2002. *First language attrition, use, and maintenance: The case of German Jews in anglophone countries*. Amsterdam/Philadelphia: John Benjamins.

SCHMID, MONIKA S. (FORTHC.). 'I always thought I was a German. It was Hitler who taught me I was a Jew.' Persecution, identity, and deixis. Us and Them (working title), ed. by Anna Duszak.

SCHOENMAKERS-KLEIN GUNNEWIEK, MARIAN. 1998. Taalverlies door taalkcontact? Een onderzoek bij Portugese migranten. Brabant: Katholieke Universiteit dissertation.

SELIGER, HERBERT W./ROBERT M. VAGO (eds). 1991. First language attrition. Cambridge University Press.

SELINKER, LARRY. 1972. Interlanguage. International Review of Applied Linguistics 10.209-31.

SØNDERGAARD, BENT. 1996. Language maintenance, code mixing, and language attrition. Some observations. Nowele: North-Western European Language Evolution 28-29.535-55.

WAAS, MARGIT. 1996. Language attrition downunder: German speakers in Australia. Frankfurt/New York: Peter Lang.

WALK, JOSEPH (ed.). 1981. Das Sonderrecht für die Juden im NS-Staat. Eine Sammlung der gesetzlichen Maßnahmen und Richtlinien - Inhalt und Bedeutung. Heidelberg/Karlsruhe: C.F.Müller.

YAĞMUR, KUTLAY. 1997. First language attrition among Turkish speakers in Sydney. Tilburg University Press.