CONTRASTIVE PATHOLINGUISTICS
THE ACQUSIITION OF ENGLISH GRAMMATICAL MORPHEMES BY GERMAN DYSLEXICS IN A FOREIGN-LANGUAGE TEACHING CONTEXT[1]

Udo O. H. Jung

University of Marburg

1. Introduction

In referring, albeit in a footnote, to "traditional interdisciplinary barriers" Crystal, Fletcher and Garman (1976 : 23) remark that the "subject of language disability is of interest to many groups — clinicians, mother-tongue teachers, and foreign-language teachers, in particular". One could not agree more with them. However, the *T* (their abbreviation for therapist or teacher) will search in vain the subject indices of Ingram (1976), Crystal, Fletcher and Garman (1976) or Crystal (1979) for instances of one of the many quasi-synonyms for dyslexia or dyslexia itself. Neither (congenital) word-blindness or legasthenia, strephosymbolia or (specific) reading disability, to name only the better-known, are mentioned. And yet, the originators of the authoritative *Language Assessment, Remediation and Screening Procedure* (LARSP) would most probably agree that, if dyslexia (the term) did not already exist it would have to be invented. A disease, an estimated 25 million Americans suffer from according to TIME Magazine (September 6, 1982; sometimes the right figure is based not on actual count, but on what the public is willing to believe), must have a name. And even if the above figure was rejected or higher-ranking sources were called in, the evidence found there is enough to disturb the complacency of many an educator: "Estimates (sic) of their (the dyslexics') number vary considerably and range up to 10—15 percent of all school children" (Brown 1979 : VI). In the Federal Republic of Germany, where the state ministers of education between 1972 and 1976 issued decrees

[1] This paper was first presented at the 18th International Conference on Polish-English Contrastive Linguistics held in Błażejewko, 2—4 December 1982. In the revised version, I have attempted to work in the valuable comments made on the occasion by William Lee, Waldemar Marton, David Michaels, and Werner Winter. I should also like to thank Goethe-Institute Munich for a generous travel grant.

concerning the recognition (and diagnosis by implication) as well as the treatment of dyslexic children (cf. Dummer 1977b and Heyse 1976), up to 30 percent of some (not all!) school populations have been found (cf. HIBS 1979) to be affected by *Leserechtschreibschwäche* (reading and writing weakness), as the phenomenon is called here. Here as elsewhere (the situation in Argentina, Australia, Austria, Belgium, Canada, China, Czechoslovakia, Denmark, Finland, Great Britain, Hungary, Ireland, The Netherlands, Norway, Rhodesia (Zimbabwe), South Africa and the United States is described in Tarnopol and Tarnopol (1976)) dyslexia has become a serious problem since the time it has entered public consciousness. This language disability has attracted its detractors (Schlee 1976; Sirch 1975; Spitta 1977) and defenders (Levinson 1980; Vellutino 1979). It definitely deserves the attention of those who are paid by society to solve problems besetting it and to protect it from the machinations of mountebanks who have at their command plenty of panaceas against all kinds of diseases which they have first talked into being.

2. Dyslexia: Past and Present

The history of research on dyslexia from the vantage point of modern linguistics has yet to be written. Recently, Sylvia Farnham-Diggory (1978 : 22—51) and Mcdonald Critchley (1973 : 6—11) have both covered the ground, and they have given us informative and readable accounts of the subject matter as it appears to educationist and neurologist respectively. The German-speaking public may be referred to W. Böck (1975) for an equally dependable treatment. Without doing injustice to any of them, all three authors can be described as being in fundamental agreement with the "inventor" of dyslexia (W. P. Morgan), a British medical doctor, who in November 1896 published the case history of a 14-year old boy. Using the doctor's own words, the case of Percy F. can be stated in the following way: "He has always been a bright and intelligent boy, quick at games, and in no way inferior to others of his age. His great difficulty has been — and is now — his inability to learn to read. This inability is so remarkable, and so pronounced, that I have no doubt it is due to some congenital defect."

Since those early days, case history has been piled upon case history, but, if the truth must be told, little progress has been made in nearly a hundred years of research. The orthodox school of thought still subscribes to a theory of dyslexia which is characterized by ten tenets:

1. The patients are of, at least, normal intelligence. More often than not, dyslexia is coupled with a special gift for, say, mathematics. Percy F. was fond of arithmetic, he told Dr. Morgan.
2. The male sex is more strongly afflicted by this illness. Girls find themselves underrepresented in the statistics of those researchers who keep tabs on dyslexia (cf. Klasen 1971).

3. The familial occurrence of dyslexia is noted by most researchers. Dyslexia is handed down from generation to generation (cf. Hallgren 1950).
4. Although psychogenic explanations are occasionally brought into play (cf. Trempler 1976; Grüttner 1980), neurologically inspired theories of dyslexia exclude irregularities in the mother-child relationship or sibling rivalry as possible causes.
5. Dyslexia extends into adulthood. The patients' brains mature only very slowly.
6. Brain lesions, however, do not play a part in the etiology. At best, so-called minimal cerebral dysfunctions can be detected. They are rated as epiphenomena however.
7. The dyslexics' peripheral perceptors, their eyes and ears are fully intact.
8. The patients' schooling has been normal. Irregular attendance schedules, prolonged illnesses or frequent changes in teaching staff must be ruled out as possible causes.
9. Dyslexia is not related to social class. Theoretically, upper, middle, and lower classes stand in equal danger of being afflicted (cf., however, Niemeyer 1974).
10. and most important: Dyslexics give themselves away by characteristic mistakes. Letter rotations (*lion* becomes *loin*, *saw* turns into *was*) are the hallmark of dyslexia (cf. Schenk-Danzinger 1975). Pringle Morgan's patient displayed them: "In writing his own name he made a mistake, putting "Precy" for "Percy", and he did not notice the mistake until his attention was called to it more than once" (Morgan 1896 : 1378).

In 1925, Samuel T. Orton, an American, came forward with an explanation for the reversals, which the neurologists of our own days are inclined to call an "over-simple hypothesis". But since they also agree that "the underlying notion of imperfect cerebral dominance is still acceptable today" (Critchley 1973 : 66), a brief outline of the causes of Orton's *strephosymbolia* will be given. Orton believed that three types of cortical tissue distributed over both hemispheres — visual perceptive (1), visual recognitive (2), and visual associative (3) — were involved in reading and writing.

Brain lesions, he knew, of the first two layers in either left or right hemisphere did not interfere with performance. Lesions in the visual associative cortical cells of the right hemisphere were of no consequence either. Left hemisphere lesions of the visual associative field on the other hand always resulted in the loss of the ability to read. Orton concluded that the left hemisphere was all important and that a child had to learn to suppress identical information stored, he thought, *mirrorwise* in the right hemisphere. If the left hemisphere failed in performing this function, images from the right hemisphere would enter the processing of graphic signs (via the bridge) and interfere with correct output: reversals and incorrect serial order of letters would result.

In a large-scale experiment with 1402 male and female second graders from Vienna schools, the Austrian authority on dyslexia, Lotte Schenk-Danzinger, was able to isolate a group of 55 pupils (3.9 percent) who showed a disproportionately big increase of reversals as againts other error types (Schenk-Danzinger 1975). However, the concept of letter rotations and the instrument used by Schenk-Danzinger to elicit readings have been heavily criticized lately for various reasons and by various people with particular emphasis on the assumed underlying reasons for the reversals (Angermaier 1974; Valtin 1972b). When the special detector (Schenk-Danzinger's "Wiener Leseprobe") was put aside and the dyslexic students were given a relatively non-artificial running-on text, viz. a poem, even Schenk-Danzinger (1975 : 128) had to admit that only one in six reading mistakes/errors was a reversal. To put it the other way round: the elementary school teacher whose job it is to impart functional literacy to her wards may be excused for ignoring the one reversal and concentrating her efforts on the remaining six mistakes; she should not be blamed for this. With the reversal as the hallmark of dyslexia gone, researchers soon started to investigate hitherto neglected or minor causes of dyslexia, insufficient auditory discrimination, for instance. In his masterly *Dyslexia: theory and research* Frank R. Vellutino has recently reviewed the available literature. He concludes that "it seems quite likely that given normal intelligence, intact visual and auditory acuity, and adequate exposure to and investment in reading as a process, success in learning to read depends, first, upon *linguistic ability in general* and second, upon the *ability to make one's knowledge of language explicit*. By extension, deficiencies in any aspect of linguistic functioning will presumably result in difficulty in reading" (Vellutino 1979 : 342 f.).

It looks as if dyslexia, other than the name might imply, is not restricted to one skill, i.e. reading, alone. The German researcher, who equates *Dyslexie* or *Legasthenie* with Leserecht*schreib*schwäche, has chosen a nomenclature which is closer to the diagnostic practices of researchers around the world. In diagnosing a dyslexic the diagnostician will, as a rule, administer the WISC first and follow this up with a standardized *writing* test. If a discrepancy is observed between the patient's (average to high) IQ and his results in the writing test, the boy (they will be a majority!), often left-handed or ambidextrous, is pronounced a dyslexic (see also Valtin 1980). At least two of the four skills which constitute knowledge of a language are thus implicated in dyslexia. (The relationship between reading and writing is discussed in Frith and Frith 1980). A closer look at the practices of diagnosticians soon reveals that, in their opinion, yet another skill, *listening*, must be a poorly developed property in the dyslexic's verbal repertory. Auditory discrimination tests, like the Wepman, are used to pick out the poor listener (see Vellutino (1979 : 291—305) for a detailed discussion). Poor listeners are considered

high-risk children prone to become dyslexics. And on top of this, in 1975 Susan Ann Vogel came up with the theory that the *syntactic* abilities of dyslexic children may be as deficient as their reading, writing and listening abilities (cf. Vogel 1975). Beset by such mighty handicaps, how could the dyslexic child ever hope to fully master the intricacies of his mother tongue, let alone the acquisition of a second or foreign language? In a critical appraisal of the Vogel study (cf. Jung 1981) I believe I have shown that the results obtained and reported by Vogel can be questioned, to say the least. But it would not be surprising at all if Vogel was partly right, because some of the (rather complex) syntactic structures which testers like to include in their batteries are acquired relatively late in life (cf. Chomsky 1969). A testee, who does not know how to read and who consequently has no access to book-lore cannot be expected to know the syntactic structures which prevail in the written code.

3. Studying the foreign-language performance of language-impaired children

To my knowledge, only very few people (Bruck 1982; Doernberg 1978; Jung 1980; Reisener 1978a and b) have so far attempted to assess the *foreign-language* skills of language-impaired children. But it is a worthwhile study of a subgroup of learners who, in the Federal Republic of Germany at least, cannot be prevented from attending secondary schools, where foreign languages are obligatory. It is true, more often than not, that language-impaired children do not go on to secondary schools, dyslexics do. Here we have the rare case of a language disability which can be studied against the background, not only of the first but of a second language also.

Studying the verbal behaviour of dyslexics, who try to master a second language, may help to finally settle the long-standing debate on whether letter rotations are not, after all, the veritable "trademark" of the defect, for reversals do occur in great numbers during the early stages of learning to write in a foreign language. An adherent of the orthodox school of thought would predict such a (re)occurrence of letter rotations on the basis of the neurological malfunctioning which supposedly underlies this phenomenon. He would predict the (re)occurrence of a *dyslexia in the foreign language*, no matter what that language may be, as long as the writing system is alphabetical. A researcher who subscribed to the theory that dyslexia was based on faulty auditory discrimination would probably expect the dyslexic to transfer this inability to the second-language learning process; he would predict a *foreign-language dyslexia* with the phonological system of the mother tongue acting as the independent variable. If my own (informal) classroom observations can be trusted the reversals, which occur in great numbers at the beginning of foreign-language instruction, disappear again from the writings of normal students after about two or three months. If the diagnostic

judgement of those whose job it is to "certify" dyslexic students can also be trusted, they do not differ from normal students with regard to letter rotations at the end of a two-year period of instruction in English as a foreign language (Jung 1980a). But more rigorous research is probably needed here.

Mother-tongue reading instruction may also profit from such research, the teaching of reading in a foreign language usually resorting to a whole--word approach as opposed to phonics. Without being taught explicity, the whole-word approach forces students to deduce phoneme-to-grapheme correspondence rules by themselves, which they do as a rule. The (German) English-as-a-foreign-language learner, who pronounces the word ⟨gauge⟩ as /*go : dʒ/ has abstracted a rule based on previous learning: d*au*ghter, h*au*ghty, l*au*ndry, M*au*d, P*au*l, s*au*cer and t*au*ght are pronounced that way. If the dyslexic can do this there is no need to insist on teaching him to how *speak* his mother tongue in primary school, which is what the reading teacher normally does when she insists on spelling pronunciation in order to bring about a close fit of spoken and written language. Simply juxtaposing the written and the spoken word, instead of prescribing artificial rules, which force the student to "hear" an /r/ at the end of German /'kɔfə/ (=Koffer (luggage)) because the ⟨*r*⟩ shows up in the written code, and to pronounce it, too, may be a better way to engage the language learning (linguo-cognitive) capacity of the student. Söderbergh (cf. her 1982 survey article) has successfully experimented with this technique using both normal and language--disabled subjects.

Studying the (foreign-) language learning acquisitional mechanisms of dyslexic students may also serve as a convenient check against the claims put forward by both researchers on dyslexia and second-language acquisition. It can always be claimed that the syntactic deficiencies of dyslexic students are a consequence of their lacking motivation to read books, which contain the syntactic patterns the tests test. If dyslexia is characterized by a syntactic disability this should carry over into second and foreign-language learning. After two years of teaching, with books read at home playing only a minimal role, if they play any role at all, syntactic deviations from the norm, provided by the learning curves of normal students, should become noticeable. If they do, they will be welcomed as corroborative evidence. They will also shed some light on the question of universal acquisitional strategies, which has been raised lately in connection with the search for an integrated view of language acquisition (cf. Wode 1981 : 279—294). The advantage of looking at the English-language proficiency of both normal and dyslexic German students therefore consists in the fact that both parties start from par, as it were. If, after a while, the foreign-language output of the dyslexics begins to deviate from that of their peers it can be assumed with some certainty that this is so for endogenous reasons. Their failure, if failure is their fate, can this time

only with difficulty be laid at the teacher's door. It might be a good thing, therefore, to accept dyslexia as the real thing, to dispense with disbelief and to see where it leads one.

4. The DEA-Project

In the fall of 1978, a pilot project was launched by the Hessian Institute for Educational Planning and School Development (HIBS) in conjunction with the Federal Ministry of Education and Science (BMBW) under the title "Didaktische Differenzierung im englischen Anfangsunterricht (DEA), unter besonderer Berücksichtigung lernschwacher Schüler" (Didactic differentiation in beginners' English classes with particular reference to slow learners). Several comprehensive schools from the Frankfurt area took part in the experiment, which was scheduled to last for two years. The project leader had developed special teaching materials (cf. Mohr 1979) which were assembled in units, each designed to cover a certain number of teaching hours. The overall aim of the project was to test two hypotheses:

1. Can the attrition rate of normal foreign-language classes be diminished in favour of the slow learners if the ordinary structural progression of the teaching materials is replaced by a notional/functional progression similar to the Council of Europe's *Treshold Level* (cf. van Ek 1980)?
2. Can small-group work help to defuse the difficulties encountered by slow learners and children with behaviour problems?

The teachers involved in the project met regularly for two-day conferences with the project leader to discuss and, where necessary or possible, to improve on the teaching materials. On two of these occasions, in April 1979 after 143 teaching hours, when the project was still in its first year and in April 1980, not long before its end, they collaborated to construct two informal tests designed to cover the first three and the last three units respectively. These tests were administered to the roughly 350 participating students on two consecutive days.

4.1 The Tests

The tests consisted of two halves. The first half, administered on the first day, aimed at assessing the classical (structural) areas of 'Spelling', 'Grammar' and 'Vocabulary' (mostly) by means of the multiple choice technique. If a label has to be stuck on them, *discrete-point* would serve the purpose.

The second half, however, was specially designed to tap the students' communicative competence. In a few words or with the help of pictures a context of situation was described in German and the task before the students was formulated. To give an example:

Schreibe auf Englisch, was die Personen sagen.
Die deutschen Sätze in Klammern helfen Dir.
(Write in English what the persons say. The German sentences in brackets will help you.)
Susan und Peter treffen Tom auf der Straße.
(Susan and Peter meet Tom in the street.)
Susan:

(begrüßt Tom)
(greets Tom[2])

To these 'utterance initiators' the students responded by inserting in writing the linguistic forms which they considered to be appropriate. In the above case, most students reacted with a simple and stereotype "Hello, Tom". But there were other and more complex situations which generated a considerable amount of linguistic variation.

4.2 The Research Population

A team of 10 German teachers, 9 female and 1 male, a third of whom, it must be pointed out, had not been certified as teachers of English, instructed a total of 358 fifth-graders in 12 classes. The mean age of these students was 10.89 years. In the judgement of the reading specialists at the participating schools, forty-two or 13.1 per cent of the student population were dyslexic.

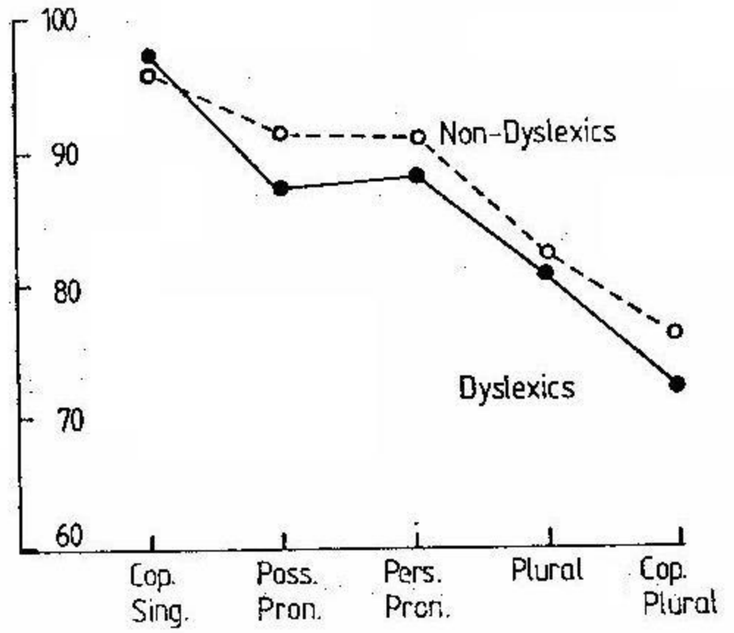
The test papers of 31 of these dyslexics were secured in April 1979 and compared with those of a group of 31 non-dyslexics selected at random. A year later, when the second informal test was administered, 27 of the dyslexics (attrition rate 12.9 per cent) and 26 of the normal students (attrition rate 16.1 per cent) were still available, so that they could be compared a second time.

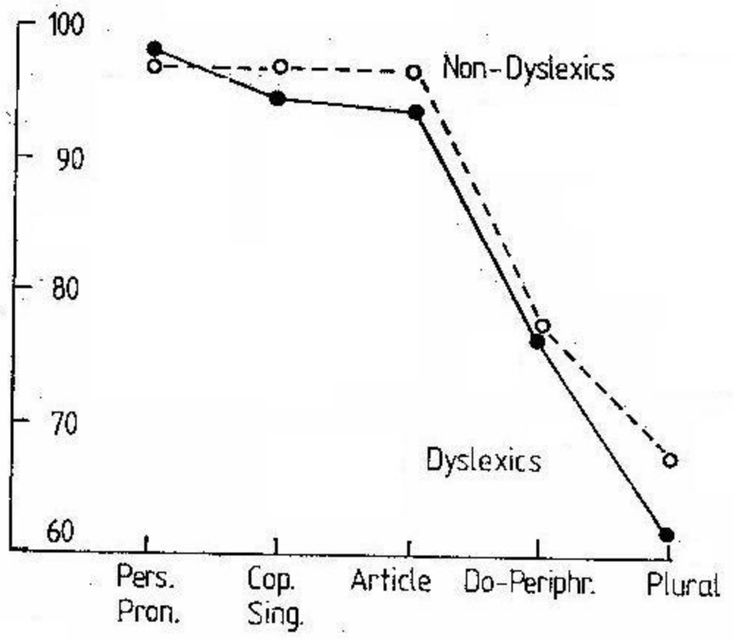
5. Data Processing

The question as to how the more than 1000 utterances should be processed was decided in favour of the Dulay/Burt-technique (cf. Burt and Dulay 1980), in spite of the fact that it has lately met with some well-grounded criticism (Wode et al. 1978). In an (admittedly unsatisfactory) manner data collected at one point in time can and on occassion do mirror developmental stages of language acquisition, especially if large numbers of students contribute to the error pool (cf. Jung 1980). Different students may represent a whole gamut of developmental stages, even though their linguistic performance was assessed at the same point in time.

[2] The English translations are printed here for the benefit of the reader who is not well-versed in German. They did not appear in the test.

In our case, only grammatical morphemes in obligatory position were counted. (It may be added in parentheses that the number of morphemes supplied in non-obligatory positions was negligible.) Two points were awarded for each and every morpheme correctly supplied, one point for an incorrect morpheme and nil points when the required morpheme was missing. From the raw data group scores were then computed and converted into learning curves (see Figures 1 and 2).





6. Results

Figures 1 and 2 summarize the results of the two tests administered in 1979 and in 1980 respectively. As can be seen, the two sets of learning curves display a fair amount of similarity, even parallelism. Some differences, however, are worth noting:

1. The early learning curves are not as steep as the later ones. This may be due to a relatively high degree of overlearning by the students across all grammar points before the first test was administered.
2. The steepness of the later curves is the result of a "clash" between three grammar points with a high degree of stabilization (Cop. sing.; Pers. pron.; Article) and two others (Do-periphrasis; Plural) which one would not consider properly acquired yet.

Unfortunately, the informal tests did not yield more than five processable grammatical morphemes. What is more, the test authors did not construct their tests with comparability in mind. The plural of nouns, however, is represented in both tests, and it promises to be of interest to the discussion centering on language *acquisition* phenomena which may or may not surface in foreign-language *learning* contexts. The rest of this paper will therefore be devoted to a discussion of this problem.

7. Discussion

7.1 Language Learning vs. Language Acquisition

A distinction has been drawn between (conscious) language *learning* and (informal, subconscious) language *acquisition* (Felix 1978, Gingras 1978, Krashen 1981). It is based on the observation that, no matter what the source language may be (Dulay and Burt 1974), or whether the acquirers are children or adults (Burt and Dulay (1980 : 277 ff.)) and no matter what response mode (speech or writing) is used (Burt and Dulay (1980 : 283 ff.); Freedman 1982), a "natural order" of grammatical morphemes is regularly found in the linguistic output of second language learners. On occasion, however, this natural order can be disturbed (Larsen—Freeman 1975). Stephen Krashen has speculated that this may be "due to the intrusion of the conscious grammar" (Krashen 1978 : 4). Conscious grammar typically obtrudes itself in a foreign-language teaching/learning situation, and Stephen Krashen was quick to speculate again, viz. that "it would not be at all surprising if foreign language students show a greater learning effect, manifested by more "unnatural orders"" (Krashen 1978 : 6). Ours must have been the situation Stephen Krashen had in mind: German students of English as a foreign language being tested with an instrument designed to direct their attention to the communicative, not

the formal linguistic components of the verbal exchanges which the test simulated. This then is the rationale behind the data collection and evaluation processes described in previous paragraphs. We set out to test the question whether language acquisition strategies which are generated by an individual who acquires a second language, because as a human being he is uniquely "wired" to do so, may not surface again in the foreign-language classroom. If there is such a thing as a language acquisition device (LAD) which starts operating as soon as it is confronted with the primary linguistic data in an organism's environment, it is only natural that scholars should begin to wonder if such a language-specific cognitive device can be "switched off" by the teacher who enters the classroom. What is the difference — one may ask — between the linguistic data put before a student in a second-language acquisition and in a foreign-language learning situation to justify such an assumption? The fact that the student in a foreign-language is classroom is presented with an orderly progression of language input instead of being immersed in a language bath (as in natural second language acquisition) can hardly be adduced as a valid reason for categorically separating the two. The likelihood, therefore, of second-language *acquisition* strategies surfacing from under several layers of teacher-imposed *learning* strategies cannot be dismissed off-hand.

7.1.2. Testing the Resurgence Hypothesis: Naturalistic Acquisition of English Noun Plurals

To test the Resurgence-Hypothesis it is important to know what the sequence of plural allomorphs is under natural conditions. According to Henning Wode who observed and recorded his four German as L1 speaking children acquiring English as L2 in a Californian town, the sequence of allomorphs is /—s/, /—z/ and /—əz/. He also noticed that his subjects sometimes left the stems uninflected. They reverted to the use of zero morphemes when they were confronted with unfamiliar lexical items or unfamiliar tasks, such as tests, and he speculates that this is a "non-language specific, non-age dependent universal strategy which is followed in cases of uncertainty" (Wode 1981 : 266). As to language-specific differences, Wode observes that his children were late in incorporating stems in —er /—ə ~ə^{n}/ and /θ/. This might well be a consequence of their L1 German; an argument might be made out in favour of the contrastive hypothesis. German nouns ending in —*er* (*Mutter, Ritter, Müller, Gewitter*, etc.) do not normally take a flexive, but either form the plural via Umlaut or leave the stem uninflected. Kari Sajavaara, who has also recommended that "second-language studies must be replicated with foreign-language learners" (Sajavaara 1982 : 151) is probably right when he says that the "value of CA (i.e. contrastive analysis) is small or nil in environments

of optimal acquisition, but is grows in correlation with the distance to such a situation ..." (Sajavaara 1982 : 154). We should therefore take a closer look at our classroom data to see if a German-English structural contrast can be said to lie at the base of part of our learning curves.

7.1.3 Contrastive Hypothesis versus Language Acquisition

There were at least five occasions in the communicative part of the second informal test where one would expect the students to use plural forms (see Table 1). A closer look at the students' responses is likely to reveal whether their linguistic behaviour is uniform across all five instances or whether there are significant differences between, say utterance No. 1 and 4. Table 2 gives the details. As ours was a written test, Table 2 foresees only three possibilities: The plural marker (s) is either present or absent; in addition students may attempt to get around the problem by avoiding the use of nouns in the plural. Utterance 4 is a case in point. The majority of students put down *At 12.12 hrs* to avoid the longer *At twelve minutes past twelve.*

TABLE 1

Number of utterance	Initiator	Expected Response
(1)	A sagt, daß er Hamster mag. (A says he likes hamsters)	I like hamster*s*.
(2)	B sagt, daß es genau 4 Minuten vor acht ist. (B says that it is exactly four minutes to eight)	It is exactly four minute*s* to eight.
(3)	B wiederholt die Uhrzeit (B repeats time)	It is four minute*s* to eight.
(4)	R.O. (=Railway Officer) sagt: Um 12.12 Uhr. (R.O. says: At 12.12)	At twelve minute*s* past twelve.
(5)	Lady: (verlangt zwei Fahrkarten nach Dover) (Lady: asks for two tickets to Dover)	Two ticket*s* to Dover, please.

TABLE 2

	Dyslexics (N=27)			Non-dyslexics (N=26)		
Number of Utterance	percentage ø morph	percentage s-morph	percentage avoidance	percentage ø morph	percentage s-morph	percentage avoidance
1	74.1	11.1	14.8	73.1	3.8	23.1
2	14.8	59.3	25.9	11.5	80.1	7.7
3	14.8	55.5	29.6	11.5	80.1	7.7
4	3.7	29.6	66.6	3.8	34.6	61.6
5	37.0	51.9	11.1	34.6	50.0	15.3
Means	28.9	41.5	29.6	26.9	49.7	23.1

Even a superficial inspection of Table 2 reveals that the linguistic behaviour of our subjects is not uniform across all five utterances. Whereas utterance initiator No. 1 generates a very high degree of faulty output with only a moderate amount of avoidance behaviour, utterance No. 4 behaves inversely: the rate of avoidance behaviour rises dramatically to assume the highest percentage of all the cells in this row. Note, however, that dyslexics and non-dyslexics do not differ in this respect. It seems to be the case that dyslexics and non-dyslexics alike are influenced by the fact that the German lexeme *Hamster* (utterance No. 1) does not have an overtly marked plural. They seem to transfer their L1 habits to the plural formation of English or, to put it somewhat differently, they have not far advanced in integrating the pattern to which the word *hamster* belongs into the system of English plural formation, although in other cases, as evidenced by utterance No. 5, they have proceeded somewhat beyond the chance (50 per cent) level. It may be noted at this point that, although plural formation usually ranks high in all (second language) morpheme acquisition studies (for a summary cf. Krashen 1981 : 51—63), Howard Jackson (1982) found Punjabi learners of English as a second language deficient in this respect. I have had similar (oral) reports from English teachers of immigrant children in the Leeds/Bradford area. And Punjabi does have overt plural marking; zero morphemes are the exception.

Manfred Raupach (personal communication) has pointed out to me that the word *ticket*, which occurs in utterance No. 5 as the lexeme to be pluralized, has been incorporated into the lexicon of many if not all Germans. The plural, in both English and German, is *T/tickets*, and one would expect the students to score well above average therefore. For some reason or other

they do not. It must be said in this connection that 50 per cent correct answers after almost two years of study is close to failure from a teaching point of view. There are two instances, however, when at least the non-dyslexics achieve a high degree of correctness, viz. utterances 2 and 3, where 3 is a mere repetition of 2. I have, on another occasion (cf. Jung 1982c), interpreted this fact as a case of rote learning. The students could have learnt these utterances by heart. This, by the way, would be perfectly in keeping with the way they were taught. The students were presented with language forms (Redemittel) to be able to perform speech acts. The reason for the failure of the dyslexics, who score at least 20 per cent below the standard (set by the non-dyslexics) is a matter of dispute and speculation. It cannot be explained simply as a matter of negligence or oversight (part of what it means to be a dyslexic in common parlance), because such an argument would have to apply to all five utterances in an equal manner. Negligence would seem to be a pervasive quality which does not normally apply selectively. What is it that accords special status to these two sentences for the dyslexics, one third of whom circumvent the problem? I have no solution to offer on the basis of the available data.[3] Although data collected at one point in time can occasionally mirror a whole gamut of developmental stages, it would be important here to know what went before and what came after the second test was administered. We must therefore let the case rest here and wait for data of a longitudinal nature to supplement the corpus.

Summary

To sum up then: If our data are not an artefact of the test instrument it can be said with some confidence that there is no reason to discard the resurgence hypothesis. Some of the phenomena observed in natural second language acquisition processes, notably Wode's rule (jokingly formulated as "If in doubt leave it out"), do reoccur in the foreign language classroom (cf. also Felix 1977a, 1977b). At the same time, it must be admitted that there is clear evidence for the influence exerted by the students' L1. German students, be they handicapped or not, sometimes fall back on or are on occasion hindered by their L1 German when they attempt to learn English as a foreign language in a classroom setting. In an attempt to reconcile the dichotomy of "language transfer" and "creative construction" Helmut Zobl (1982) has recently argued that in cases of *zero contrast* (the L2 possesses a category that is absent from the learner's L1) the pace of acquisition of any L2 can be considerably slowed down. Zobl does not say whether this applies only in cases of *total* zero contrast or whether the same rule accounts for cases like the one before us where we have only *partial* zero contrast, but it may well be that the principle applies here as there. Anyway, Zobl's complexity constraint is compatible with our data.

On the whole it can be said that dyslexic and nondyslexic students do not differ fundamentally from one another. There is an overall, near-perfect fit in their learning curves, with the dyslexics generally lagging behind some, but not much. Below the surface, however, certain differences can be observed which need further probing. However, if ours is a valid picture of what can be achieved in two years time, if for the purposes of the experiment the project organizers have not systematically reduced the learning load, then it can be said with no small amount of certainty that dyslexic students are not incapacitated from learning foreign languages: they measure up to their peers. If their verbal behaviour ever deserved to be called pathologic, the dyslexics have either sufficiently recovered in the meantime or there must be differences between them and the normal students which the test instruments used here were incapable of registering.

[3] A t-test was run on the whole set of 53 correct plural responses. It was found (df=51; t=1.492) that the null hypothesis cannot be rejected on the basis of the data.

REFERENCES

Angermaier, M. 1974. *Sprache und Konzentration bei Legasthenie*. Göttingen: Hogrefe.

Angermaier, M. (ed.). 1976. *Legasthenie*. Das neue Konzept der Förderung lese-rechtschreibschwacher Kinder in Schule und Elternhaus. Frankfurt a. M.: Fischer Taschenbuch Verlag.

Benton, A. L. and Pearl, D. (eds). 1979. *Dyslexia. An appraisal of current knowledge*. New York: Oxford University Press.

Böck, W. 1975. "Die Wege der Legasthenieforschung von den Anfängen bis zur Gegenwart". In Schenk-Danzinger, L. (ed.). 1975. 1—41.

Brown, B. S. 1979. "Foreword". In Benton, A. L. and Pearl, D. (eds). 1979. V—VII.

Bruck, M. 1982. "Language-impaired children's performance in an additive bilingual education program". *Applied psycholinguistics 3*. 45—60.

Burt, M. K. and Dulay, H. C. 1980. "On acquisition orders". In Felix, S. W. (ed.). 1980. 265—327.

Chomsky, C. 1969. *The acquisition of syntax in children from 5 to 10*. Cambridge, Mass.: The MIT Press.

Critchley, M. 1973. *The dislexic child*. London: William Heinemann Medical Books Ltd.

Crystal, D. 1979. *Working with LARSP*. London: Edward Arnold.

Crystal, D., Fletcher, P. and Garman, M. 1976. *The grammatical analysis of language disability. A procedure for assessment and remediation*. London: Edward Arnold.

Doernberg, G. 1978. *Die Betreuung von Legasthenikern der Sekundarstufe I in der Schulpraxis*. Aufbau der Kurse—Diagnose—Therapie. Frankfurt: Diesterweg.

Dulay, H. C. and Burt, M. K. 1974. "Errors and strategies in child second language acquisition". *TESOL Quarterly 8*. 129—136.

Dummer, L. 1977a. *Die Diagnose der Legasthenie in der Schulklasse*. Bad Heilbrunn/Obb: Klinkhardt.

Dummer, L. 1977b. "Verzeichnis der Erlasse in den Ländern der BRD". In Dummer, L. 1977a. 98—99.

Farnham-Diggory, S. 1978. *Learning disabilities*. London: Fontana/Open Books.
Felix, S. W. 1977a. "Entwicklungsprozesse im natürlichen und gesteuerten Zweitsprachenerwerb". *Anglistik & englischunterricht 1*. 39—60.
Felix, S. W. 1977b. "Natürlicher Zweitsprachenerwerb und Fremdsprachenunterricht". *Linguistik und Didaktik 31*. 231—247.
Felix, S. W. 1978. "Language acquisition and language learning". *System 6*. 63—71.
Felix, S. W. (ed.). 1980. *Second language development. Trends and issues*. Tübingen: Gunter Narr Verlag.
Fisiak, J. (ed.). 1981. *Contrastive linguistics and the language teacher*. Oxford: Pergamon Press.
Freedman, E. S. 1982. "Experimentation into foreign language teaching methodology: the research findings". *System 10*. 119—133.
Frith, U. and Frith, Ch. 1980. "Relationships between reading and spelling". In Kavanagh, J. F. and Venezky R. L. (eds). 1980. 287—295.
Gingras, R. C. (ed.). 1978. *Second-language acquisition and foreign language teaching*. Arlington: Center for Applied Linguistics.
Grotjahn, R. and Hopkins, E. (eds). 1980. *Empirical research on language teaching and language acquisition*. Bochum: Studienverlag Dr. N. Brockmeyer.
Grüttner, T. 1980. *Legasthenie ist ein Notsignal*. Reinbeck b. Hamburg: rororo.
Hallgren, B. 1950. "Specific dyslexia: a clinical and genetic study". *Acta Psychiatrica et Neurologica*. Suppl. Nr 65. 1—287.
Heyse, H. 1976. "Schulische Richtlinien und die Rechtslage des Legasthenikers". In Angermaier, M. (ed.). 1976. 143—153.
HIBS (=Hessisches Institut für Bildungsplanung und Schulentwicklung) (ed.). 1977. *Pramod Kurier 1*. Wiesbaden: HIBS.
Ingram, D. 1976. *Phonological disability in children*. London: Edward Arnold.
Jackson, H. 1982. "Errors of Punjabi learners of English. A comparison of the grammars of Punjabi and English". *ITL Review of Applied Linguistics 55*. 69—91.
Jung, U. O. H. 1980a. "Dyslexia and the foreign-language teacher". In Grotjahn, R. and Hopkins, E. (eds). 1980. 173—198.
Jung, U. O. H. 1980b. "Reading, writing and phonology in modern foreign language teaching". In Felix, S. W. (ed.). 1980. 249—263.
Jung, U. O. H. 1982a. "The grammatical abilities of German dyslexics in English as a foreign language". In Jung, U. O. H. (ed.). 1982b. 223—233.
Jung, U. O. H. (ed.). 1982b. *Reading: A symposium*. Oxford: Pergamon Press.
Jung, U. O. H. 1982c. "Immigrant children to Germany: their grammatical abilities in English as a foreign language". Paper presented at the 5th International Conference on Contrastive Projects in Jyväskylä (2—6 June 1982).
Kavanagh, J. F. and Venezky, R. L. (eds). 1980. *Orthography, reading, and dyslexia*. Baltimore: University Park Press.
Klasen, E. 1971. *Das Syndrom der Legasthenie*. Bern: Huber.
Krashen, S. 1978. "The monitor model for second-language acquisition". In Gingras, R. C. (ed.). 1978. 1—26.
Krashen, S. 1981. *Second language acquisition and second language learning*. Oxford: Pergamon Press.
Larsen-Freeman, D. 1975. "The acquisition of grammatical morphemes by adult ESL students". *TESOL Quarterly 9*. 409—420.
Levinson, H. N. 1980. *A solution to the riddle of dyslexia*. New York: Springer.
Mohr, P. 1979. "I'm looking for a jumper. Texte und Übungen zum Englischunterricht im 5. Schuljahr mit heterogenen Lerngruppen—ein Werkstattbericht". *Englisch-amerikanische Studien 1*. 41—70.
Morgan, W. P. 1896. "A case of congenital word blindness". *The British Medical Journal*. November 7. 1378.
Niemeyer, W. 1974. *Legasthenie und Milieu*. Hannover: Schroedel.
Orton, S. T. 1925. "Word-blindness in school-children". *Archives of neurology and psychiatry 14*. 581—615.
Reisener, H. 1978a. "Englischunterricht und Leserechtschreibschwäche". *Der fremdsprachliche Unterricht 12*. 49—60.
Reisener, H. 1978b. "Legasthenie und Englischunterricht. Unterrichtspraktische Überlegungen". *Englisch 13*. 149—150.
Sajavaara, K. 1982. "The Monitor model and contrastive analysis". *PSiCL 16*. 145—155.
Schenk-Danzinger, L. (ed.) 1975. *Handbuch der Legasthenie im Kindesalter*. Weinheim: Beltz.
Schlee, J. 1976. *Legasthenieforschung am Ende?* München: Urban & Schwarzenberg.
Sirch, K. 1975. *Der Unfug mit der Legasthenie*. Stuttgart: Klett.
Söderbergh, R. 1982. "Early reading as language acquisition". In Jung, U. O. H. (ed.). 1982b. 207—213.
Spitta, G. 1977. *Legasthenie gibt es nicht ... Was nun?* Kronberg/Ts.: Scriptor.
Tarnopol, L. and Tarnopol, M. (eds). 1976. *Reading disabilities. An International Perspective*. Baltimore: University Park Press.
Trempler, D. (ed.). 1976. *Legasthenie — neue Wege der Heilung*. Freiburg: Herder.
Valtin, R. (ed.). 1972a. *Empirische Untersuchungen zur Legasthenie*. Hannover: Schroedel.
Valtin, R. 1972b. "Untersuchung mit der Wiener Leseprobe". In Valtin, R. (ed.). 1972a. 75—102.
Valtin, R. 1980. "Deficiencies in research on reading deficiencies". In Kavanagh, J. F. and Venezky, R. L. (eds). 1980. 271—286.
Van Ek, J. A. 1980. *Threshold level English*. Oxford: Pergamon.
Vellutino, F. R. 1979. *Dyslexia: theory and research*. Cambridge, Mass.: The MIT Press.
Vogel, S. A. 1975. *Syntactic abilities in normal and dyslexic children*. Baltimore: University Park Press.
Wode, H. 1981. *Learning a second language. I. An integrated view of language acquisition*. Tübingen: Gunter Narr Verlag.
Wode, H. et al. 1978. "Developmental sequence: an alternative approach to morpheme order". *LL 28*. 175—183.
Zobl, H. 1982. "A direction for contrastive analysis: the comparative study of developmental sequences". *TESOL Quarterly 16*. 169—183.