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Profile Analysis of Language Disability

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This chapter outlines the motivation and general characteristics of the notion of *Profiles* of grammatical ability, for use in the assessment and remediation of language disorders. A full rationale and detailed illustration of the procedure is given in Crystal, Fletcher, and Garman (1976). The topic seems appropriate for the present volume, as its focus is very much on patterns of *individual* disability. Although we would like to make generalizations about disability, and contribute to diagnosis, at present we do not think that sufficient empirical work has been done to enable us to provide a coherent linguistic account of the major clinical syndromes, or a set of criteria which would lead to more precise definitions of terms used in this field. We have begun to make suggestions in this area now, but the bulk of our work in recent years has been to identify the linguistic characteristics of an individual patient's disability, and to suggest guidelines for individual therapy. Our aims, in the first instance, are pragmatic—to make a useful contribution to ongoing therapy. We wish to look, in as much detail

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as possible, at samples of language behavior, in order to define immediate and long-term teaching goals, and then to explore the several different routes a therapist can take in order to arrive at one of these goals. In due course we hope, by examining several cases of successful and unsuccessful therapy, to develop some kind of explanatory account of the nature of linguistic intervention, and thus, ultimately, to contribute to a theory of language disability.

Our initial motivation, then, was to establish criteria for evaluation. What would count as a "useful contribution"? Such criteria, of course, must come from the professions involved (therapist, remedial teacher, etc.) and not from the linguist directly—though he will necessarily have to interpret these criteria in terms of his own framework of reference. Our interpretation of the clinical literature suggests that, to be justified, a linguistic approach must be able to contribute to both of the main areas of clinical inquiry: *assessment* (in its broadest sense, to include screening and diagnosis) and *remediation*. Its role must be judged, first, by the extent to which it provides the teacher or therapist (T, hereafter) with insight into the character of a patient's or pupil's (P, hereafter) disability, or of a disorder seen as a general type. By "insight" here, we mean two things: (*a*) the observations made by the linguist were not being made by Ts working within traditional paradigms of inquiry (or which could not have been made thereby, due to their limited range); (*b*) the observations are productive, that is, they suggest patterns of assessment (by demonstrating the *systematic* nature of the data of disability, in given instances) and patterns of remediation (by making *predictions* concerning progress, motivating "What to teach next?" and indicating specific strategies of T–P interaction, such as the type of stimulus sentence to use).

Second, the role of linguistics must be judged by the extent to which it can introduce an element of conscious control into a clinical situation. This point, of course, applies to any technique of intervention, and indeed to the entire concept of speech therapy. The aim of the exercise is not solely to obtain progress in P, but to be sure that the progress obtained was due to the intervention of T, using the training which qualified T as a therapist in the first place, and thus be able to explain the basis of any improvement or deterioration. It is a commonplace that many Ps can improve given plenty of sympathy from relatives and a rich language environment. To what extent is improvement facilitated by therapeutic intervention? Sometimes it is possible to say with confidence that the therapy "caused" the progress, especially when a rapid change in language ability is produced after a long period of stability or regression. It is even sometimes possible to arrange for comparative studies using control groups, though here the methodological and ethical problems are well known. But on the whole, verification of the efficacy of most therapeutic strategies is lacking, in scientifically convincing terms. If linguistic techniques are to be valuable,

then, they should be able to introduce a greater measure of control over the nature of T–P interaction, thus helping to build up the professional confidence that clinical language work badly needs. There is no attempt here to suggest how far these techniques can help in achieving such a goal. By themselves they are not enough, as so many of the variables are nonlinguistic in character. But it should be possible to show a *relative* gain in control, compared with current practice; and it is just such an increased awareness of the linguistic variables involved affecting assessment and remediation that linguistics, in our view, aims to provide, and by which it should be judged.

It will be evident from this orientation that we feel the linguistic study of language disability to be still at an empirical and methodological stage. We are as anxious as anyone to see theoretical progress being made, to see the development of consistent, comprehensive, and formally based diagnostic classification, and to relate the findings of language pathology to the study of language behavior in general. But such progress is not going to be made until far more patients have been studied in linguistic depth from several linguistic points of view than has yet happened. Case studies abound, but the differences in theory and methodology used (e.g., sampling procedures, choice of linguistic model) make comparison of results extremely difficult. What is needed is the large-scale analysis of patient language, using a standardized procedure, and a sufficiently sophisticated linguistic framework to be able to cope with the range of patterns that are found. In our case, we focused our attention on the possibility of developing such a framework for grammatical analysis, an area which has, on the whole, received little systematic investigation by clinicians, and where there was a great deal of accumulated wisdom already available in general linguistics and psycholinguistics to indicate what could and should be done. The framework which was ultimately established came to be known as LARSP, the Language Assessment Remediation and Screening Procedure, and this has now been used routinely in several centers in Britain for some time. The salient characteristics of LARSP are threefold: descriptive, developmental, and interactional. (See the Appendix at the end of this chapter for a sample chart.)

DESCRIPTIVE

The descriptive framework is a simplified version of the grammatical approach found in Quirk *et al.* (1972), and is, in principle, capable of handling the whole range of adult syntactic structures in English. Four levels of grammatical organization are recognized in this model: simple sentence (or clause), phrase, word, and sentence (clause) connectivity. At each level, there is a classification of the main structures operating in

English. At the level of the clause, all utterances are analyzed into combinations of Subject, Verb, Object, Complement or Adverbial, for example, SVO (*John kicked the ball*), VOA (*Kick the ball quickly*), etc. At the level of the phrase, the range of expansions that may occur at each element of clause structure is given, for example, Determiner + Noun, Adjective + Noun, Preposition + Determiner + Noun. At the level of the word, the set of inflectional morphemes is given *−ing*, *−ed*, etc. Under the heading of connectivity, we give the set of devices that build up complex structures—the main means of coordination and subordination.

In addition, two functional distinctions are introduced: (*a*) the traditional classification of sentence types into statement, question, command, and exclamatory (≠"exclamation") is made; (*b*) a distinction between major sentence types (as given above) and minor sentence types (grammatically unanalyzable or nonproductive patterns, for example, responses such as *yes–no* and stereotyped phrases such as *How's tricks?*).

Finally, measures of sentence length (in terms of institutionalized words) and interaction (number of sentences per conversational turn) are given, to assist the comparison of our results with those for whom assessment in terms of length is a primary factor.

DEVELOPMENTAL

A synthesis of the descriptive findings of the language acquisition literature provides a postulated set of age-related stages of syntactic development. Ages are averages, which will ultimately need to be refined with reference to socioeconomic, sex, and other well-known variables. Seven stages are recognized:

Stage I	(0:9–1:6)	Single-element sentences, for example, N (*daddy*), V (*gone*)
Stage II	(1:6–2:0)	Two-element clauses, for example, SV (*daddy gone*), VO (*kick ball*), PrepN (*in box*), Det N (*that ball*).
Stage III	(2:0–2:6)	Three-element clauses, for example, SVO (*daddy kick ball*)
Stage IV	(2:6–3:0)	Four-(or more) element clauses, for example, SVOA (*daddy kick ball hard*)
Stage V	(3:0–3:6)	Clause sequence and connectivity, for example, coordination (*daddy gone in the garden and him hurt his knee*)
Stage VI	(3:6–4:6)	Completion of grammatical "systems": elimination of local child forms, for example, in the pronoun system (*he* for *him* above), and the addition of further members of a system, for example, predeterminers in the NP (*all, both,* etc.).
Stage VII	(4:6–?)	Other structures, for example, sentence connectivity using adverbials (*actually, frankly*), emphatic word order variation (*it was X that Y,* etc.).

No attempt is made to explain these stages in nonlinguistic terms (for instance, whether the basis of development between Stages I and IV is best seen in terms of the child's increasing ability in memory, cognitive processing, auditory attention, or whatever). The developmental framework is simply being used as a yardstick against which individual variation can be plotted. At each Stage on the profile chart, the most commonly noted structures are given, those not receiving separate mention being subsumed under the label "Other." Any P who idiosyncratically used a structure not on the chart with particular frequency could of course have this counted separately, by adding a category to the chart in an ad hoc way. The pragmatic validity of the selection of structures represented lies in the fact that, having now analyzed several hundred Ps in these terms, there have been few occasions when this ad hoc procedure has proved necessary. Putting this another way, the more we would find ourselves having to put structures under the Other heading, the less useful our procedure would become (see following).

INTERACTIONAL

P's sentences are classified into whether they are spontaneous or response. Under the latter heading, a primary classification is made of T's stimulus sentences into whether they are questions or not, and the type of P's responses is analyzed into full, elliptical, zero, and so on. It is plainly of importance that T should know the vagaries of P's response patterns, in order to focus his attention on possible weaknesses in his stimulus or reinforcement language.

The aim of the LARSP procedure is to provide a profile of language use in samples of data obtained from P. We operate with 30-min samples of unstructured interaction between P and an adult (usually a therapist or teacher) in carrying out a full assessment (30 min being the average time of a clinical session, in our experience), though this depends to some extent on the nature of the inquiry. (LARSP has also been used on written samples, e.g., in deaf education; on samples of signing—where the signing system reflects linguistic structure, as in the Paget-Gorman Sign System; and in routine screening contexts, samples have been

as short as 5–10 min.) All the structures found in the sample are analyzed using the above descriptive framework and transferred onto the profile chart, thus producing a set of raw figures across the range of structures represented. No attempt is made to turn these figures into a single "score" (a procedure which we find of little value, in view of the range of variables involved), or to think solely in terms of percentages (in view of the small totals often found). The aim is to search for general patterns of distribution—a balanced use of structures at a given level, an imbalance (e.g., many phrase structures compared with few or no clause ones), a mismatch between structural use and chronological age (the traditional notion of "delay"), and so on. Various examples of profiles are given in the Appendix: It is their interpretation that we now turn to.

PROFILES AND LANGUAGE DISABILITY

Perhaps the most striking feature of language disability, particularly to the linguist encountering the field for the first time, is its heterogeneity.[1] Occasionally, a specific feature of a child's linguistic behavior can be tied to some underlying condition: There are syndromes which have recognizable and relatively predictable effects, like deafness or cerebral palsy. More commonly, however, the effects of a particular syndrome (like Down's—see following) on language performance are more diffuse and unpredictable. And in very many cases where children are referred to speech clinics, their linguistic abnormality has no obvious organic basis. Nevertheless, there are limits to the variability among subjects, provided that a measure of performance at a suitable level of generality is selected. The more detailed an analysis is, in syntactic terms, obviously the more differences can arise. The level of detail of the LARSP profile is intended to allow the assessment of individual differences within categories which will admit the recognition of patterns among subjects. The long-term aim of a research strategy based on this procedure is to determine such linguistic patterns as there are, and correlate them with external variables: physiological, psychological, social, and educational. At the present early stage, however, we are at the point of looking for patterns that emerge from profile assessments of a number of individual cases. For the most part, the patterns we are looking for are in production, and it is in the study of disorders of production that we envisage a syntactic procedure of this kind being most useful. In principle, of course, the procedure can also be used

[1]Our comments on language disability are limited here to children. Profiles have however been used with adult language disability. See in particular Chapter 8 of Crystal, Fletcher and Garman (1976).

to isolate patterns which may be causing comprehension difficulties, or to structure and grade sentence patterns for comprehension work.

The most obvious feature to emerge from the cases we have looked at so far is language delay. The provision of a developmental scale correlated with age[2] allows a straightforward assessment of immature language, whenever a sample of a subject's structures is seen to be characteristic of much younger children. Profile 1 serves as a good example of this, for a child in the earliest stage of language development.

PROFILE 1: HUGH

This shows the analysis of a sample of language from a boy of 3:4, normal in all other respects, whose language consisted of single-element utterances only, as this sample shows: (T stands for Therapist here; P for Patient).

T: *shall we 'make her sít/ or lìe/*
P: *dòwn/---*
T: *Húgh/-*
P: *dòwn* [ŋi]/ *dòwn/.*
T: *yes what's thàt for/--*
P: *gìrl* [ŋi]/
T: *the gìrl/-.*
P: **yès/*
T: **is she 'going to sít/ or lìe/*
P: *lìe*
T: *hḿ/*
P: *lìe/*
T: *lìe/*
P: *yès/--*
T: *thère/.'what a'bout gràndpa/.I mean dàddy/ is 'he 'going to sìt/ or lìe/--*

[2]There are, of course, difficulties with correlating scales of language development with age estimates, as anyone familiar with Roger Brown's work knows. Even with Brown's data, though, it is striking that two out of his three subjects perform very closely in terms of age (cf. Limber, 1973, who reports in a sample of 12 children, a partitioning into one group which shows very little individual variation in development, and another more unpredictable group. See also Ramer (1976) concerning distinct styles or strategies of language acquisition.). In addition, large sample studies of phonological acquisition (e.g., Templin, 1957; Olmsted, 1971) have not found individual age variation in relation to patterns of development impossible to handle. We are therefore assuming that large sample syntax studies (e.g., Wells, 1974) will enable us to eventually predict within a small range the kind of syntax one might expect from children of particular ages. The figures used currently on the chart are best estimates, based on information available, and therefore likely to be superseded or at least revised.

P: *sīt/*
T: *sìt*
P: *yès/---*
T: *ôo/.I've 'bent his 'legs the 'wrong wày/* (laughs) 20
'what's he dòing/--
he's sìtting/.
'what about Mûmmy/
is 'she going to sít/ or lìe/-
P: *sīt* 25

(Transcriptional conventions are as follows, tone-unit boundaries: /; nuclear tones: ` , ´ , ¯ , ˇ , i.e., falling, rising, level, and falling-rising, respectively; pause distinctions: - is used if the pause length is comparable to a pulse of a speaker's rhythm; . if it is short relative to this; and --, --- are used for relatively longer pauses; stressed syllable: ' precedes; * before a part of an utterance indicates that it was spoken simultaneously with another utterance.)

As well as a summary of the child's production, the profile also provides, via the interactional information at the top of the chart, data on stimuli to which the child is not responding. For example, the Hugh profile shows (in the ∅ category under *Abnormal* response) that the child did not respond to 25% of the questions asked him. Checking back to the transcript revealed that in a number of cases it was questions of the *What's he doing* type which were not responded to (see line 21 preceding). These questions require a verb in any appropriate response, and this inability to supply verbs when they are not directly modeled for him fits in with the remainder of the child's language behavior at this point in his development. He only produces utterances which are verbs, or verblike, when the therapist models them for him (cf. lines 9 and 10, 16, and 17 preceding). Information derived from the top of the profile chart, together with details from the original transcript, is a useful complement to the assessment of production data, and may of course be essential if the right decisions are to be made about remediation. In this case the therapist ensured that the child could use verbs spontaneously before trying to teach Stage II clause structures like SV and VO.

Once a child's language is even slightly more advanced than single-word utterances, it is unusual to find cases of 'pure' delay—an even distribution of structures across the chart. It is more common to find a sample showing up on the profile with *structural gaps*, either in terms of (*a*) sentence function; or (*b*) within one of the sentence structure levels. It is not uncommon to find language-delayed children not asking questions, for example, perhaps because the roles adopted in a clinical setting encourage the child to answer questions, but not to learn how to ask them. This limitation would need identifying for remediation. Recognition of sentence structural gaps is facilitated by the clause–phrase–word level division. On this basis we can potentially identify four salient patterns:

1. Phrase structure imbalance—a tendency to develop phrase structure without clause structure (this is the most common of these patterns for our cases, and is illustrated below by the Peter profile). A comparable phenomenon within a transformational grammatical framework is reported by Morehead (1972) who points to a tendency for his subjects to expand phrase structure before clause structure in the early stages).
2. Clause structure imbalance—a spread down the chart to Stage III or IV of clause structures, without parallel phrase structure differentiation. There is often a one-to-one relationship between elements of clause and elements of phrase structure, for example, *man make boat, they got lorry*. Hierarchical organization within elements of clause structure is minimal. Lackner's (1976) report on research with mentally retarded children gives some evidence of this for his subjects; older children tended to elaborate phrase structure (noun and verb phrases) whereas the younger ones did not. There is some indication in the cases we have seen that noun phrases and verb phrases (in the sense of modals or auxiliaries plus main verb) have to be regarded as separate problems.
3. Poor word-level development, in comparison to clause- and phrase-level. This is only apparent if clause and phrase-level development reaches into Stages III and IV, and is reflected in an absence of inflections in obligatory contexts. Among other investigators, Johnston and Schery (1976) report a similar finding: For their sample of "atypical" children, there was a similar order of acquisition of inflectional morphemes to that reported by Brown (1973) for normals, but acquisition was delayed.
4. Strong word-level development, with very few structures at all at phrase- and clause-level. This has been noted by a number of investigators working with educationally subnormal children (e.g., Newfield and Schlanger, 1968; see also Dever, 1972). Morehead and Ingram (1973) suggest that inflections, being more obvious features of surface structure, are easier for children whose general rate of learning is slow.

PROFILE 2: PETER

Pattern (1)—phrase structure imbalance— is found among language-delayed children somewhat more advanced than Hugh, and shows up as the production of some isolated words, a few phrase types, with a lack of any coherent relationships among them, an absence of clause patterns,

and a high proportion of *Ambiguous* cases.[3] The basis for the (partial) Peter profile is utterances like this:

cár/	*on bùs/*
lórry/	*clèaning/*
across chàir/	*blue pàint/*
dàddy/	*and the mán/*
in bòx/	*big pàrcel/*
trèes/	*mé/*
bùshes/	*nò/*
èggbox/	*daddy màn/*

The child was 4:6 at the time when the assessment was made. There is very little clause structure evident, and clearly any remediation in a case like this will concentrate on clause-level structural types. Individual problems can of course arise even when the subject falls within a general pattern of assessment and it will perhaps be informative to look briefly at the early course of Peter's remediation. In this instance the first verb-based structures modeled for the child following initial assessment were verb + object. When the child had to use these structures himself to describe pictures, he often inserted *of* between verb and object:

jumping of [əv] *fence*
eating of orange
climbing of ladder

The reason for these deviant structures[4] was not immediately clear. It is true that prior to the LARSP assessment his therapist had worked on prepositions with him. Possibly, therefore, he supposed that nouns in construction were to be preceded by **some** element, and used *of* for the purpose, so that structures like *eating of orange* were idiosyncratic syntactic blends. This would not explain, however, why he did produce, in the same session as the deviant structures, normal verb + object sentences. Or why, in a subsequent session, he used *girl of riding of horse*. It is possible that *of* was being used variably at any point in sentence structure where a grammatical word could appear (or had appeared in sentences of this type modeled for him). An alternative explanation hinges on the relationship between the structures he was learning and the pictures that were normally used as a stimulus for these structures. He may in certain cases have had word-finding difficulties, or have been unsure of what he was describing, and used *of* as a gap-filler. One example of ambiguity in a picture which caused him difficulty was when he used *cutting of water* to describe a man sawing a log. In the picture, however, the log had a blue wavy line underneath it, which could have been the reason for the structural uncertainty signaled by *of*. Subsequent therapy concentrated on (*a*) modeling SV and VO structures using the same verbs in both cases, from the set that conveniently function with or without a direct object in English, like *eat, drink, paint,* to reduce at least one aspect of the structural uncertainty; and (*b*) to model appropriate uses of *of*, in phrases like *cup of tea, in front of*. Over a number of sessions, these tactics succeeded in eliminating *of* from the inappropriate places in structure that it had been used in.

This brief excursion away from assessment into Peter's remedial history underlines the ever-present possibility of quite idiosyncratic problems that can arise with language-delayed children who may conform to a common assessment pattern, and illustrates the care that has to be taken not only with the form of syntactic structures selected for remediation, but also the relation between the content of the models used and the actions or pictures which are chosen to exemplify them. After a decade of concentration on syntax in child language research, more recent work has emphasized that the child is not simply learning the rules of grammar, but rather learning how to mean; or, in case the emphasis on meaning is interpreted as an argument for ignoring syntax, it is perhaps better to say that the child is learning how to match surface structures he hears to states of affairs he apprehends. While LARSP is conceived of in terms of syntax both because this is an aspect of language development that we can describe, and also because it appears to be the locus of a high proportion of language disabilities, remediation cannot neglect the meanings that syntactic structures express, and that may be a source of confusion to the child.

PROFILES 3, 4, AND 5: DIFFICULTIES WITH COMPLEX SENTENCES

A recurrent problem in our data, for children somewhat more advanced than Peter, but still apparently lagging behind their peers, turns out on closer examination to be an inability to combine simple sentences into complex structures, which shows up on the profile as an absence of structures at Stage V, even though up to that point there is clause, phrase and word-level development, as in the following examples from a boy of 8:0.

[3] *Ambiguous* is the category used under Section A of the chart for utterances which could receive two or more equally plausible syntactic interpretations. An example would be Bloom's *mommy sock* example without the contextual clues to help decide whether it is a Subject–Object clause type, or a Noun–Noun phrase type (Bloom, 1970).

[4] Deviant in the sense that this is not an acceptable adult structure for verb + object, or part of the expected grammatical development of normal children (see Crystal, Fletcher, and Garman, 1976, pp. 28–29).

'my 'rabbit 'nearly did dìed/
'then the 'guinea-pigs did nòt 'nearly 'died/
and 'I did stròke it/
'us 'play with the fòotball 'game
'you 'hold thìs one/
'then I 'put some 'sticks on the hòle/
we thròwed the 'stones/
'I make a 'bow àrrow/

In this case there are clause structures up to Stage IV, as well as comparable phrase structures, and a reasonable integration of phrase with clause structure. Nevertheless, the child does not use coordinate or subordinate structures, some of which we know the normal child is developing from 3:0 onward (cf. Limber, 1973). Sometimes in cases like this, the child may string a number of sentences together, but there will be little linguistic or logical connectivity between them. This area of difficulty is also referred to by Menyuk (1975), who claims that conjunction and embedding cause particular difficulty for children she calls aphasic.

Profiles 3 and 4 show two Down's Syndrome children (from Owen, 1976). The obvious linguistic difference between them, clearly shown by the profiles, is that DSA can use complex structures, whereas DSB, for the most part, cannot, even though he can use clause and phrase structures up to the end of Stage IV. The children are both 12-years old. Of course, DSA is still not using the language of a normal 12-year old, but at least she has begun to link sentences using the conventional syntactic devices. Most of her complex structures are coordinate, though she does use some relative clauses (relativizing objects only—cf. Limber, 1976). These profiles are included here not only because they demonstrate how a detailed syntactic analysis can isolate this specific structural problem, but also because of the interest that has been shown in the linguistic characteristics of this syndrome. The examples in fact seem to contradict Lenneberg's assertion (1967, p. 311) that for DS children "chronological age is a much better predictor for language development than computed IQs." These subjects were roughly the same age, but the most recent IQ estimates were: DSA, IQ 56; DSB, IQ 40.

It is of course not only some DS children for whom the transition to complex structures appears to be difficult. Profile 5 represents Sarah, a child of 5:8 who was thought to be a victim of rubella, and who had also come to a halt, as far as syntagmatic organization was concerned, at Stage IV. As with DSB, there is considerable expressive output, much of it spontaneous[5] but only simple sentence structures. Like DSB also, a number of the utterances consist of only single elements (if we compare

[5]The definition of *spontaneous* here (see Section C at the top of the profile) is an utterance which is **not** an immediate response to a question or some other linguistic stimulus.

the proportion of single element utterances in Profiles 4 and 5 with the proportion in Profile 3, we might suspect that the restriction to simple sentences is accompanied by a more general immaturity). Unlike DSB, many of Sarah's utterances are unanalyzable because they cannot be understood. Again, unlike DSB, her sentences lack complex verb phrases—she does not use auxiliaries. Within what seems to be a general pattern there will, as we have already seen, be individual differences which may have considerable bearing on the kind of remediation attempted (and may also cause a particular pattern hypothesis to be revised or abandoned). Some of the relevant information on individuals will be extralinguistic, and will depend on other aspects of the child's cognitive abilities: Sarah, for example, showed little coordination to begin with of language and action patterns. When asked *show me the X and the Y,* she was likely to point to X, and then to Y, but while pointing give the names of the objects in the order Y and X. Remediation was concerned not simply with her learning of devices for connecting simple sentences into longer structures, but also with the matching of actions appropriately to the parts of the coordinated structures.

PROFILES EXTENDED

These examples of the application of a syntactic profile based on normal language development to the area of language disability demonstrate, in our view, the effectiveness of the notion both for isolating individual differences and for generating interesting hypotheses concerning patterns of disability. We should like now to briefly consider the question of how far the notion of a profile can be extended.

In principle, the profile idea is applicable to any area of linguistic inquiry, given the existence of relevant descriptive and developmental information. One could, for instance, think in terms of phonological profiles; and within this, in terms of profiles for segmental as opposed to nonsegmental phonology; and within this, profiles for the acquisition of specific systems, for example, vowels, fricatives. In the present case, LARSP pays particular attention to structures at early developmental levels (for obvious pragmatic reasons). The further down the chart one proceeds, the less specific is the information given. At Stage VI, for example, all the chart tells you about pronouns, for instance, is the total number of "errors" made (which can be compared with the total number of pronouns used, given at Stage III). But there is then nothing to stop the analyst extending the notion of profile to pronouns as such, and constructing, on the basis of the available language acquisition research, a developmental profile of pronominal usage. And the same applies to any of the other categories on the chart. The profile chart is a first approximation only. Any

of the structures listed may need to be more closely scrutinized in order to provide a specific remediation procedure. Apart from anything else, one will always need to look at some of the high-scoring structures to see whether there might not be semantic reasons for the apparent ability, for example, a child who is "good" at colors may produce a high score in the Adjectival boxes, but the restricted semantic range of the items used would have to be borne in mind in evaluating his command of that syntactic category.

Could the profile idea be extended beyond the field of language disability? In principle, yes—though not this particular profile. LARSP was constructed to try to meet a very specific aim. The particular selection and ordering of structures arrived at, and the general level of abstraction provided, stemmed from a consideration of the range and frequency of the speech patterns impressionistically noted in our early encounters with language disordered patients. In a sense, all the profile chart is is a systematization of these first impressions. Before it could be extended, then, a corresponding preliminary inquiry would have to be made, to see whether other dimensions, not needed in the context of language disorders, would need to be introduced. For example, if the notion of profile was extended to the field of foreign language teaching, one would immediately have to introduce a dimension to cope with the problems of L2 interference. Moreover, the closer one came to the study of normal language use in adults, the more modifications would have to be introduced. This can be seen clearly if one tries to use the present profile for the analysis of normal adult language. In the Appendix, we give a profile of one speaker engaging in a 30-min conversation (Profile 6). The most noticeable characteristic is perhaps the high proportion of totals under the various Other categories—a clear example of the limitation of the profile referred to earlier. To make the profile idea work well in such contexts, one would have to think again about how the data should be organized. There is presumably some limit on the amount of detail that can be introduced into a description before the perceptibility of the profile becomes obscured. At some point, to preserve the identity of a profile, a greater degree of hierarchic organization would have to be introduced. On the other hand, the more abstract the categories in a profile, the less informative the profile becomes. One needs profiles that are in a reasonably close relationship to the data, if they are to generate interesting hypotheses. This can be seen in a field such as authorship identification, or in stylistic analyses in general, where several hundred variables are involved. It is perfectly possible—indeed, desirable—to develop more well-balanced accounts of an author's use of structures, to avoid the word–phrase bias in traditional accounts of style. But to make this good, one would have to pay particular attention to clause and sentence structure and sequence, and here any inventory of possible effects would run into

several hundreds. Obviously some grouping of these effects is necessary, but the more one sets up higher-order categories, the less discriminating analyses become. Perhaps there is some optimum balance between generality and detail which will most satisfactorily discriminate the main possibilities of authorial style; but the stylistic literature is nowhere near identifying what this might be.

In short, the idea of profile analysis, itself nothing new, could be profitably extended to other areas of inquiry. It provides an example of a methodology which raises interesting theoretical questions, for example, what are the most salient criteria of linguistic identity. It is for this reason that we felt a report on our work in the restricted field of language disorders might be of general interest.

APPENDIX

Profile 1

A Unanalysed — 1 Unintelligible 35 — 2 Symbolic Noise — 3 Deviant

Problematic — 1 Incomplete — 2 Ambiguous 8

B Responses

Stimulus Type		Totals	Repetitions	Normal Response: Elliptical Major 1	2	3	4	Full Major	Minor	Abnormal: Structural	ø	Problems
200	Questions	117	2	98					69		51	
21	Others	10	1	2					8			

C Spontaneous — Others

Minor 77 — *Social* 77 — *Stereotypes* — *Problems*

Major 50

Stage	Sentence Type	Excl.	Comm. 'V'	Quest. 'Q'	Sentence Structure: Statement — 'V' 5 'N' 36 Other 9 Problems
Stage I (0;9–1;6)					
Stage II (1;6–2;0)			VX	QX	Conn.: and, c, s, Other. Clause: SV, VC/O, SC/O, AX, Neg X, Other. Phrase: DN, VV, Adj N, V part, NN, Int X, PrN, Other. Word: -ing, pl, -ed
Stage III (2;0–2;6)			VXY let XY do XY	QXY VS	X + S:NP; X + V:VP; X + C/O:NP; X + A:AP. Clause: SVC/O, VC/OA, SVA, VO$_d$O$_i$, Neg XY, Other. Phrase: D Adj N, Adj Adj N, Pr DN, N Adj N, Cop, Aux, Pron 4, Other. Word: -en, 3s, gen
Stage IV (2;6–3;0)			S	QVS QXYZ	XY + S:NP; XY + V:VP; XY + C/O:NP; XY + A:AP. Clause: SVC/OA, SVO$_d$O$_i$, AAXY, Other. Phrase: N Pr NP, Pr D Adj N, cX, XcX, Neg V, Neg X, 2 Aux, Other. Word: n't, 'cop, 'aux
Stage V (3;0–3;6)		*how* *what*		tag	*and*, c, s, Other. Clause: Coord. 1 1, Subord. 1 1, Clause: S, Clause: C/O, Comparative. Phrase: Postmod. clause 1 1, Postmod phrase 1. Word: -est, -er, -ly

Stage VI (3;6–4;6) (+) NP	(+) VP	(+) Clause	(−) NP	(−) VP	(−) Clause
Initiator Coord	Complex	Passive Complement	Pron Adj seq Det N irreg	Modal Tense V irreg	Concord A position W order
Other			Other		

Stage VII (4;6+) Discourse		Syntactic Comprehension
A Connectivity	*it*	
Comment Clause	*there*	*Style*
Emphatic Order	Other	

Total No. Sentences 127 — Mean No. Sentences Per Turn 0·54 — Mean Sentence Length 1·0

Profile 2

A Unanalysed — 1 Unintelligible — 2 Symbolic Noise — 3 Deviant

Problematic — 1 Incomplete — 2 Ambiguous

B Responses

Stimulus Type		Totals	Repetitions	Normal Response: Elliptical Major 1	2	3	4	Full Major	Minor	Abnormal: Structural	ø	Problems
	Questions											
	Others											

C Spontaneous — Others

Minor — *Social* 35 — *Stereotypes* 4 — *Problems*

Major

Stage	Sentence Type	Excl.	Comm. 'V'	Quest. 'Q'	Sentence Structure: Statement — 'V' 1 'N' 16 Other 12 Problems
Stage I (0;9–1;6)					
Stage II (1;6–2;0)			VX	QX	Conn.: and, c, s, Other. Clause: SV, VC/O, SC/O 2, AX, Neg X, Other. Phrase: DN 5, VV, Adj N 3, V part, NN 7, Int X, PrN 1, Other 8. Word: -ing 1, pl, 4, -ed
Stage III (2;0–2;6)			VXY let XY do XY	QXY VS	X + S:NP; X + V:VP; X + C/O:NP; X + A:AP. Clause: SVC/O, SVA, Neg XY, VC/OA, VO$_d$O$_i$, Other. Phrase: D Adj N 1, Adj Adj N 2, Pr DN 2, N Adj N, Cop, Aux, Pron 8, Other. Word: -en, 3s, gen
Stage IV (2;6–3;0)			S	QVS QXYZ	XY + S:NP; XY + V:VP; XY + C/O:NP; XY + A:AP. Clause: SVC/OA, SVO$_d$O$_i$, AAXY, Other. Phrase: N Pr NP, Pr D Adj N, cX, XcX 1, Neg V, Neg X, 2 Aux, Other. Word: n't, 'cop, 'aux
Stage V (3;0–3;6)		*how* *what*		tag	*and*, c, s, Other. Clause: Coord. 1 1, Subord. 1 1, Clause: S, Clause: C/O, Comparative. Phrase: Postmod. clause 1 1, Postmod phrase 1. Word: -est, -er, -ly

Stage VI (3;6–4;6) (+) NP	(+) VP	(+) Clause	(−) NP	(−) VP	(−) Clause
Initiator Coord	Complex	Passive Complement	Pron Adj seq Det N irreg	Modal Tense V irreg	Concord A position W order
Other			Other		

Stage VII (4;6+) Discourse		Syntactic Comprehension
A Connectivity	*it*	
Comment Clause	*there*	*Style*
Emphatic Order	Other	

Total No. Sentences 94 — Mean No. Sentences Per Turn — Mean Sentence Length

Profile 3

A Unanalysed — 1 Unintelligible 6 — 2 Symbolic Noise — 3 Deviant

Problematic — 1 Incomplete 6 — 2 Ambiguous 3

B Responses

Stimulus Type		Totals	Repetitions	Normal Response: Elliptical Major 1	2	3	4	Full Major	Minor	Abnormal: Structural	Ø	Problems
169	Questions	159	1	17	12			59	62	6	12	2
88	Others	72		13	1			26	31		15	1

C Spontaneous 90 — 3 — 2 — Others

Minor 127 — *Social* 118 — *Stereotypes* 9 — *Problems* 14

	Sentence Type	Major: Excl.	Comm.	Quest.	Sentence Structure: Statement
Stage I (0;9–1;6)			'V' 1	'Q'	'V' 8 'N' 11 Other 10 Problems
Stage II (1;6–2;0)			VX 2	QX	Conn.: and 28, c, s 11, Other 13. Clause: SV 19, SC/O 6, Neg X 1, VC/O 13, AX 2, Other 5. Phrase: DN 101, Adj N 19, NN 2, PrN 23, VV 4, V part 16, Int X 2, Other. Word: -ing 20, pl 35, -ed 37, -en 9, 3s 13, gen 5, n't 16, 'cop 48, 'aux 28, -est, -er, -ly 5
Stage III (2;0–2;6)			VXY 2; let XY; do XY	QXY 1; VS 1	X · S:NP 11 · X · V:VP 17 · X · C/O:NP 10 · X · A:AP. SVC/O 131, SVA 60, Neg XY, VC/OA 4, VO$_d$O$_i$, Other. D Adj N 12, Adj Adj N, Pr DN 23, N Adj N, Cop 10, Aux 40, Pron 181, Other 1
Stage IV (2;6–3;0)			· S	QVS; QXYZ	XY · S:NP 18 · XY · V:VP 21 · XY · C/O:NP 7 · XY · A:AP 7. SVC/OA 28, SVO$_d$O$_i$ 1, AAXY 2, Other. N Pr NP, Pr D Adj N, cX, XcX 12, Neg V 13, Neg X, 2 Aux 2, Other
Stage V (3;0–3;6)		how; what		tag	Coord. I 22, I 9; Subord. I 9, I 2; Clause: S; Clause: C/O 1; Comparative. Postmod. clause I, I; Postmod phrase I 4

Stage VI (3;6–4;6)	(+) NP	(+) VP	(+) Clause	(−) NP	(−) VP	(−) Clause
	Initiator 7, Coord 9	Complex	Passive, Complement	Pron 7, Det 5, Adj seq, N irreg 1	Modal 5, Tense 22, V irreg 4	Concord 30, A position 4, W order 1
	Other			Other		

Stage VII (4;6+)

Discourse: A Connectivity — *it* 4; Comment Clause 1; *there* 1; Emphatic Order; Other

Syntactic Comprehension 6

Style

Total No. Sentences 319 — Mean No. Sentences Per Turn 1.3 — Mean Sentence Length 4.8

Profile 4

A Unanalysed — 1 Unintelligible 11 — 2 Symbolic Noise 16 — 3 Deviant 2

Problematic — 1 Incomplete 5 — 2 Ambiguous 4

B Responses

Stimulus Type		Totals	Repetitions	Normal Response: Elliptical Major 1	2	3	4	Full Major	Minor	Abnormal: Structural	Ø	Problems
158	Questions	136	5	42	18	5		5	41	4	17	16
135	Others	96	6	23	12	1		8	43		34	4

C Spontaneous 7 — 22 — Others 112

Minor 142 — *Social* 113 — *Stereotypes* 4 — *Problems* 25

	Sentence Type	Major: Excl.	Comm.	Quest.	Sentence Structure: Statement
Stage I (0;9–1;6)		1	'V' 8	'Q' 2	'V' 13 'N' 61 Other 20 Problems
Stage II (1;6–2;0)			VX 6	QX 13	Conn.: and 2, c, s, Other. Clause: SV 17, SC/O 1, Neg X 3, VC/O 14, AX 6, Other 1. Phrase: DN 29, Adj N 8, NN, PrN 1, VV 1, V part 8, Int X 1, Other 1. Word: -ing 11, pl 19, -ed, -en, 3s 1, gen, n't 10, 'cop 20, 'aux 3, -est 1, -er, -ly
Stage III (2;0–2;6)			VXY 3; let XY; do XY	QXY 4; VS 1	X · S:NP · X · V:VP 12 · X · C/O:NP 7 · X · A:AP 2. SVC/O 32, SVA 1, Neg XY, VC/OA 2, Other 5. D Adj N 2, Adj Adj N, Pr DN 2, N Adj N, Cop 23, Aux 12, Pron 116, Other
Stage IV (2;6–3;0)			· S	QVS; QXYZ	XY · S:NP 2 · XY · V:VP 1 · XY · C/O:NP 3 · XY · A:AP. SVC/OA, SVO$_d$O$_i$, AAXY, Other. N Pr NP 1, Pr D Adj N, cX, XcX, Neg V 13, Neg X, 2 Aux, Other
Stage V (3;0–3;6)		how; what		tag	and 2; c; s; Other. Coord. I 2, I; Subord. I, I; Clause: S; Clause: C/O; Comparative. Postmod. clause I, I; Postmod phrase I

Stage VI (3;6–4;6)	(+) NP	(+) VP	(+) Clause	(−) NP	(−) VP	(−) Clause
	Initiator 4, Coord	Complex	Passive, Complement	Pron, Det, Adj seq, N irreg	Modal, Tense, V irreg	Concord, A position, W order
	Other			Other		

Stage VII (4;6+)

Discourse: A Connectivity — *it* 3; Comment Clause 2; *there*; Emphatic Order; Other 1

Syntactic Comprehension

Style

Total No. Sentences 374 — Mean No. Sentences Per Turn 1.24 — Mean Sentence Length 2.2

Profile 5

A **Unanalysed** — 1 Unintelligible 88 2 Symbolic Noise 1 3 Deviant 1 — **Problematic** — 1 Incomplete 1 2 Ambiguous 14

B **Responses**

Stimulus Type		Totals	Repetitions	Normal Response: Elliptical Major 1	2	3	4	Full Major	Minor	Abnormal: Structural	ø	Problems
14	Questions	12		6	1	1			2		2	2
64	Others	50	4	13	6	5			11			15

C **Spontaneous** 138 — 7 — 80 — Others 58

Minor — *Social* 14 — *Stereotypes* 1 — *Problems*

Major — Sentence Structure

Sentence Type	Major: *Excl.*	*Comm.*	*Quest.*	Sentence Structure: *Statement*
		'V' 5	'Q' 1	'V' 9 'N' 68 Other 13 Problems 1

	Conn.	Clause		Phrase		Word	
Stage I (0;9–1;6)							
Stage II (1;6–2;0)		VX	QX	SV 6	VC/O 9	DN 21	VV	-ing 2
				SC/O	AX 2	Adj N 11	V part 12	pl 20
				Neg X 3	Other	NN 14	Int X 1	-ed 1
						PrN 4	Other 2	-en 1
Stage III (2;0–2;6)		VXY		X + S:NP 2	X + V:VP 3	X + C/O:NP 4	X + A:AP 1	3s
		let XY	QXY	SVC/O 16	VC/OA 2	D Adj N 1	Cop 13	gen
		do XY	VS	SVA 3	VO_dO_i	Adj Adj N	Aux	n't 34
				Neg XY	Other	Pr DN 3	Pron 9	'cop 1
						N Adj N	Other 1	'aux 11
Stage IV (2;6–3;0)		S	QVS	XY + S:NP	XY + V:VP 1	XY + C/O:NP 2	XY + A:AP 3	-est
			QXYZ	SVC/OA	AAXY	N Pr NP	Neg V 1	-er
				SVO_dO_i	Other	Pr D Adj N	Neg X	-ly
						cX 2	2 Aux	
						XcX 1	Other	
Stage V (3;0–3;6)	and			Coord. 1	1 +	Postmod. clause 1	1 +	
	how		tag	Subord. 1	1 +			
	what			Clause: S		Postmod. phrase 1		
	c			Clause: C/O				
	s			Comparative				
	Other							

	(+) NP	VP	Clause	(−) NP	VP	Clause
Stage VI (3;6–4;6)	Initiator	Complex	Passive	Pron 4	Adj seq	Modal	Concord 1
	Coord		Complement	Det	N irreg 1	Tense	A position
						V irreg 1	W order 5
	Other			Other Intonation 9			
Stage VII (4;6+)	*Discourse*			*Syntactic Comprehension*			
	A Connectivity	*it*					
	Comment Clause	*there* 2		*Style*			
	Emphatic Order	Other					

Total No. Sentences 304 — Mean No. Sentences Per Turn 2.9 — Mean Sentence Length 1.6

Profile 6

A **Unanalysed** — 1 Unintelligible 3 2 Symbolic Noise 3 Deviant — **Problematic** — 1 Incomplete 36 2 Ambiguous

B **Responses**

Stimulus Type		Totals	Repetitions	Normal Response: Elliptical Major 1	2	3	4	Full Major	Minor	Abnormal: Structural	ø	Problems
17	Questions	17		1	1			6	9			
40	Others	40		1				12	27			

C **Spontaneous** 264 — 4 — Others 260

Minor 96 — *Social* 96 — *Stereotypes* — *Problems*

Major 235 — Sentence Structure

Sentence Type	Major: *Excl.*	*Comm.*	*Quest.*	Sentence Structure: *Statement*
		'V'	'Q'	'V' 'N' Other Problems

	Conn.	Clause		Phrase		Word	
Stage I (0;9–1;6)							
Stage II (1;6–2;0)		VX	QX	SV 36	VC/O 15	DN 69	VV	-ing 42
				SC/O	AX 3	Adj N 16	V part 41	pl 101
				Neg X	Other 7	NN 3	Int X 3	-ed 123
						PrN 24	Other 42	-en 24
Stage III (2;0–2;6)		VXY		X + S:NP 10	X + V:VP 7	X + C/O:NP 15	X + A:AP	3s
		let XY	QXY 1	SVC/O 98	VC/OA 12	D Adj N 31	Cop 48	gen 120
		do XY	VS 9	SVA 27	VO_dO_i 1	Adj Adj N	Aux 105	n't 6
				Neg XY	Other	Pr DN 26	Pron 290	'cop 76
						N Adj N 6	Other 28	'aux 114
Stage IV (2;6–3;0)		S	QVS	XY + S:NP 41	XY + V:VP 31	XY + C/O:NP 5	XY + A:AP 13	-est
			QXYZ	SVC/OA 78	AAXY 34	N Pr NP 12	Neg V 6	-er
				SVO_dO_i 3	Other 31	Pr D Adj N 12	Neg X	-ly
						cX	2 Aux	
						XcX 3	Other 69	
Stage V (3;0–3;6)	and 14			Coord. 1 10	1 + 8	Postmod. clause 1 32	1 +	
	how		tag 3	Subord. 1 16	1 + 18			
	what			Clause: S 3		Postmod. phrase 1		
	c 4			Clause: C/O 21				
	s 44			Comparative				
	Other							

	(+) NP	VP	Clause	(−) NP	VP	Clause
Stage VI (3;6–4;6)	Initiator 14	Complex 59	Passive 18	Pron	Adj seq	Modal	Concord
	Coord 6		Complement 7	Det	N irreg	Tense	A position
						V irreg	W order
	Other			Other			
Stage VII (4;6+)	*Discourse*			*Syntactic Comprehension*			
	A Connectivity 12	*it* 48					
	Comment Clause 60	*there* 15		*Style*			
	Emphatic Order 16	Other					

Total No. Sentences 321 — Mean No. Sentences Per Turn 4.2 — Mean Sentence Length 8.0

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