A graphic of a water droplet falling and creating ripples on a surface, positioned at the top left of the page.

3. Scoring procedures and interpretation guidelines

3.1 Scoring each subtest

The following procedures should be used to calculate the raw scores for individual subtests. For subtests which involve expressive responses, examples of possible acceptable and unacceptable responses are given. For subtests which involve a choice of items and no verbal response, the Answer Template can be used to score that subtest quickly. Answer Templates are provided for:

- Sentence Comprehension
- Semantic Decisions.

3.1.1 Sentence Comprehension (SC)

1. Score the test using the Answer Template provided. Position the template carefully over the Record Booklet pages, ensuring that the items and responses are aligned and that you use the correct page. Correct answers will show through the windows.
2. Sum the scores and enter the total at the bottom of the page in the Record Booklet. Transfer the total raw score to the appropriate box on the front of the Record Booklet.
3. **Items 1, 3 and 5–27:** Score 1 for a correct response and 0 for an incorrect response. **Items 2 and 4:** Score 1 if the child gives the correct day and 0 for an incorrect day. **Items 28–35:** These items are arranged in pairs. The child must answer **both** items correctly in the pair in order to score. Thus items 28 and 29 must both be correct to score 1; also items 30 and 31; items 32 and 33; items 34 and 35. If the child answers both questions in a pair incorrectly, score 0; if the child answers only one question out of the pair correctly, also score 0.

3.1.2 Inferential Comprehension (IC)

1. Guidelines for individual items and examples of responses are given in the following sections. Allocate points to each item according to these guidelines.
2. Sum the scores and enter the total at the bottom of the page in the Record Booklet. Transfer the total raw score to the appropriate box on the front of the Record Booklet.
3. **Items 1–4:** Score 1 for an acceptable response and 0 for an unacceptable response. Examples of acceptable and unacceptable responses can be found in Table 1 below. No response and 'don't know' also score 0.
Items 5–9: These items aim to elicit more elaborate responses. For items 5–9, write all the child's responses in the Record Booklet and score 1 for one acceptable response, or 2 for two or more acceptable responses, according to Table 1. Thus the child can score a maximum of 2 on each of these questions, regardless of how many acceptable responses are produced. For item 9 (final item), score 2 if the child produces an acceptable response *including justification*, 0 if not.

Example responses for Inferential Comprehension

A child's response may match none of the examples given below exactly. In these cases testers should score the response with reference to the example which it most closely resembles.

e.g.

Why was the dog barking? 'To make the burglar go away' is similar to 'He wanted to scare the burglar away', and so is acceptable.

Why is the policewoman there? 'He'll see what's stolen' is similar to 'To see what's been stolen', and so is acceptable. (Note that the child is not penalised for referring to the policewoman as 'he' in this example, as grammatical accuracy is not the focus of this subtest.)

What clues will the police find? 'Fingerprints on the brick' – although 'the brick' is not an acceptable response on its own, here the response focuses on the fingerprints and so is acceptable.

If a child uses an idiomatic expression (such as 'because they're sad', meaning something like 'because they are inadequate' as a response to 'Why would someone steal something?') the tester should rely on his/her knowledge of the child's idiom to score the response.

Table 1: Inferential Comprehension – acceptable and unacceptable responses

Item	Acceptable responses	Unacceptable responses
1. Why was the dog barking?	<p>Because a burglar came in. He heard/smelled/saw the burglar. He heard the window smash. He wanted to wake (alert) the family. He wanted to scare the burglar away. The burglar was a stranger. He was trying to protect the family/his house.</p>	<p>He was scared/hungry. Because the police lady came. There was glass on the floor. He bit the robber. He was growling. Because someone said 'Ow!'. Because someone was sneaking away. He's very noisy. Dogs do that.</p>
2. Why is the policewoman there?	<p>She's investigating/checking for clues. She wants to find out what happened/the details/who robbed the house. Because there was a robbery. To see what's been stolen. She's asking questions. The family called her.</p>	<p>She's making them feel better. She's going to catch the burglar. To see if she can do anything to help. There's footprints there. Because a man left his watch by the sink. To sort everything out.</p>
3. Why did the burglar break in at the <i>back</i> of the house?	<p>Nobody would see/hear him at the back. He might be seen/spotted at the front. The family were at the front of the house. He could see the watch through the window. It was quieter at the back.</p>	<p>That's where the window is. He looked through the window. So the family wouldn't know he's done it. Because he didn't want the police to find out. The front door was locked. There was nothing at the front. He might have spotted the kitchen and wanted to steal food. So the alarm wouldn't go off.</p>
<p>4. Why do you think the burglar <i>only</i> took the watch?</p> <p><i>(Note: As the emphasis is on the burglar only taking the watch, responses should reflect this. Thus 'because it was valuable' alone would not be acceptable.)</i></p>	<p>It was the only thing that was valuable/made of gold. There wasn't anything else in the kitchen. Small enough to pick up easily. He thought he heard someone coming. The dog bit him/frightened him away. He was scared the dog would wake the family up. Because it was left by the sink. The family woke up.</p>	<p>He needed a new watch. He likes jewellery/collects watches. He wanted to tell the time. Because he didn't want to pinch other stuff/he didn't need anything else. So the family wouldn't notice.</p>

Table 1: Inferential Comprehension – acceptable and unacceptable responses (continued)

5.* What clues will the police find about who broke in?	The burglar left footprints. Blood on the floor. Cloth on the window. The burglar had torn clothes. Fingerprints.	A brick. A watch. White paper. Smashed/broken glass/window.
6.* How does the family feel now?	Sad/unhappy/upset. Angry/cross/annoyed/mad. Shocked/frightened/worried. Relieved he hadn't taken very much. Glad the police came.	Happy. Embarrassed. Safe. Lonely. Astonished/surprised. Disappointed. They want to hit the burglar. Silly for leaving the watch there.
7.* Why would someone steal something?	They want to keep it for themselves. They were told/forced to do it. They can sell it/ get money for it. They didn't have any money/poor. Nothing better to do/nasty person/ jealous.	They want to give it to somebody. Because they want to make their house nice. Because they're a thief. So he can creep! They have problems with their family.
8.* What will the family do now because of the burglary?	Mend the window. Fit window locks/an alarm. Clean up the mess/tidy up. Make sure someone stays in. Wait for the police to investigate. Keep valuables out of sight. Go to court and charge the burglar. Check if anything else is missing. Replace what has been stolen. Buy a new watch.	Track the burglar down. Make a trap for the burglar. Telephone the police/talk to the police. Tell the neighbours. Ask the neighbours if they saw who did it. Ask the neighbours to watch the house for them. Move house. Get the watch back. Shut the door. Cry. Sue the burglar.
9.* Should all theft be treated in the same way?	No, it depends on what/how much they have stolen. Yes, it doesn't matter what it is, it's still yours (not theirs). It depends on if they have been violent/done harm. Yes, theft should always be punished. Yes, it is wrong/they are bad people. Yes, it stops them doing it again. Bad people should go to jail; others don't break into houses. No, they might have been forced to do it.	Yes/No (no explanation). No, because they bought it with their own money. No, some people shouldn't be treated nicely. They might get away with it. Burglars do that.

*Items where child may score up to 2 points. See scoring guidelines, items 5–9 (page 36).

3.1.3 Naming (NA)

1. Score 1 for a correct response and 0 for an incorrect response, no response or 'don't know'.
2. Sum the scores and enter the total at the bottom of the page in the Record Booklet. Transfer the total raw score to the appropriate box on the front of the Record Booklet.
3. Acceptable alternative responses to targets are given in Table 2.
4. Close phonemic approximations (e.g. those involving one exchange, substitution or error, such as /βΙτΑ:/ for guitar) are acceptable. However, more distantly related phonemic paraphasias are not (e.g. /πΙδ↔μΙν/ for pyramid). The tester should rely on knowledge of the child's phonemic system to distinguish between the two or may need to carry out further checks on the phonological ability of the child in order to score these responses.
5. The list of acceptable responses includes regional variants that occurred in the standardisation sample. If the tester knows that the child's response is an acceptable local variant (i.e. is used by *adults*) then the response should score 1.

Table 2: Naming – acceptable and unacceptable responses

Item	Stimulus	Acceptable alternative responses – score 1	Unacceptable responses – score 0
1	guitar		violin, music
2	saw		tool, sword
3	volcano		mountain, tree, island
4	pineapple		fruit, coconut, apple
5	rhinoceros	rhino	camel, animal
6	whale		shark, dolphin, animal, fish
7	axe	hatchet	hammer, chop
8	pyramid		Egypt, tower, temple, tent
9	dentist		doctor, tooth man, scientist
10	needle		pin, sharp, sewing
11	barrel	keg	bucket, bin, tub, beer
12	flute		music, tune, recorder
13	pepper	chilli	vegetable, pickle
14	spanner	wrench	tool, screwdriver
15	judge		lawyer, teacher
16	flask		drink bottle
17	lobster		crab, spider, scorpion
18	cherry		apple, tomato, berry
19	factory	warehouse	hospital, building
20	fractions		sum, numbers, maths
21	equator		line, axis, world, earth, ring
22	microscope		magnifier, camera, magnifying
23	armadillo		dinosaur, animal, turtle, rat
24	stethoscope		heart detector
25	syringe		needle, injection, dart

3.1.4 Syntactic Formulation (SF)

The child's responses on the Syntactic Formulation subtest must be recorded carefully to enable accurate scoring. The guidelines and examples below are intended to ease the scoring procedure. Allocate scores according to the type of response for each item.

1. Sum the scores and enter the total at the bottom of the page in the Record Booklet. Transfer the total raw score to the appropriate box on the front of the Record Booklet.
2. **Different constructions are marked to different criteria.** For items 1–4, morphological accuracy is demanded. For example, in the simple past constructions (items 1 and 2), children must achieve accuracy at clause, phrase and word level and will lose points for errors on determiners (a, the), word endings, etc. However, in the later constructions (items 5 and 6), the focus is on higher level syntactic abilities and children are not penalised for omission of (for example) a determiner.
3. **Scoring is based on whether the response is *syntactically* appropriate to the stimulus.** Where a response is not identical to the target, but is an appropriate elliptical response, it can be accepted as correct, for example:

Stimulus: This one is a tiger.

Response: This one isn't, because it hasn't got stripes.

This response is just as acceptable as the given target ('This one isn't a *tiger*, because it hasn't got stripes').

On the other hand, in the following example the response is not *syntactically* appropriate for the stimulus because of the change in tense. It would therefore lose marks:

Stimulus: What did Sam do when he got to school?

Response: He *takes* his coat off and *hangs* it up.

4. **Lexical errors** or different lexical choices are not penalised in this subtest on the whole, as long as the child demonstrates the required syntax in his/her response. **Do not judge the *semantic* appropriacy of the response, just the *syntax*.** This includes pronoun choice – for example, '*He's* bought an icecream' (wrong pronoun but syntactically appropriate response) would be accepted as correct.
5. **Be aware of local dialect/regional variants** as far as possible and do not penalise locally appropriate non-standard forms, for example, 'She *done* her homework'; '*Them* two have broken the window'; 'She's *fell* off her bike'.
6. **Error analysis.** The detailed scoring guidelines below give examples of many different types of errors that were made by children in the standardisation and clinical samples. While not all of these errors are penalised in the scoring, the tester may wish to carry out further qualitative analysis of the error types to identify possible patterns. For example, a child may demonstrate difficulties with auxiliaries throughout the subtest; for another child, the errors made may vary with the demands of the construction. It may also be useful to compare the child's elicited productions in this subtest with the more spontaneous utterances produced in the Narrative subtest.

Detailed scoring instructions for Syntactic Formulation

As the criteria for scoring are different from one construction to another, testers are advised to consult closely the appropriate section when scoring each construction. The quickest route to accurate scoring is to find an example in Table 3 which matches the response made by the child. However, the tester must be sure that the response matches the example *syntactically* and pay attention to all parts of the sentence as instructed above.

Table 3: Syntactic Formulation – scoring each item

Simple past

2 points	1 point	0 points
<p><i>Any correct simple past</i> e.g. She kicked the ball. He painted some shapes.</p> <p>Note: Omission of a non-obligatory object is acceptable e.g. She scored. He painted.</p>	<p><i>Another past tense</i> e.g. She had scored the winner. The girl has scored. He was painting. The man has been painting.</p> <p><i>Construction with morphological error/omission</i> e.g. She scored goal.</p> <p><i>Incorrect/immature simple past</i> e.g. I playded football. He drawed a picture.</p> <p><i>Omission of obligatory object</i> e.g. She kicked.</p>	<p><i>No overt past tense marking</i> e.g. She scores. The man is painting a picture. Him is painting.</p> <p><i>Combination of the above errors</i> e.g. She was kicking. (past tense other than simple past, plus omission of obligatory object) The girl was play football. (past tense other than simple past, plus morphological error)</p>

Table 3: Syntactic Formulation – scoring each item (continued)

Past plus auxiliary

2 points	1 point	0 points
<p>Past plus auxiliary e.g. She's <u>bought</u> an icecream. She's <u>had</u> a lick. She <u>has</u> (just) <u>got</u> an icecream. He might <u>have broken</u> it. They might <u>have broke</u> the window. (regional variant)</p> <p>Note: This includes e.g. He <u>was throwing</u> a ball and it went through the window.</p>	<p>Simple past (i.e. no auxiliary) e.g. She <u>bought</u> an icecream. He just <u>kicked</u> a ball through the window.</p> <p>Omission or error outside the verb e.g. Her has bought an icecream. He has broken window. He has kicked a ball in the window.</p> <p>Past progressive without a second clause following e.g. They were playing football.</p> <p>'Immature'/incorrect verb forms (taking care not to penalise acceptable regional variants) e.g. She <u>has buy</u> an icecream. The icecream man <u>has just came</u>. He <u>has broke</u> the window.</p>	<p>No overt past tense e.g. She just buys some icecream. She just buying a lolly. The ball is smashing the window.</p> <p>Combination of the above errors e.g. The girl bought an icecream. (no auxiliary, immature verb form) He throwed the ball and smashed the window. (no auxiliary, immature verb form) He just kicked a football in the window. (no auxiliary, preposition error)</p>

Post-modifying clause

2 points	1 point	0 points
<p>Sentence with a post-modifying clause (i.e. including a verb) e.g. The man <u>who's holding the umbrella</u> is fat. The man <u>holding the umbrella</u> is fat. The one <u>that's got a white coat</u> is a dentist. The lady <u>who isn't wearing a red one</u> isn't a nurse. The girl <u>who ain't wearing a red scarf</u> is a doctor. The other girl <u>wearing the yellow scarf</u> is a I can't think. The doctor <u>who's wearing a yellow scarf</u> is a doctor.</p>	<p>Sentence with a post-modifying phrase (i.e. with no verb) e.g. The man <u>with the umbrella</u> is fat. The woman <u>without a red scarf</u> is a dentist.</p> <p>Post-modification error e.g. The who's holding the umbrella is fat. The man who holding the umbrella is fat. The lady not a red scarf on is a doctor. The one who wearing a white coat is a dentist</p>	<p>No clear post-modification e.g. The man's fat. The man is holding an umbrella. He's holding an umbrella and he's fat. Dad hold his umbrella. The man is holding the umbrella is fat. Her dad's fat holding an umbrella. The dentist is wearing a white coat. That woman is a dentist.</p> <p>Incomplete main clause e.g. The man who's holding an umbrella.</p>

Table 3: Syntactic Formulation – scoring each item (continued)

Subordination

2 points	1 point	0 points
<p>Sentence with a subordinate clause e.g. This isn't, because it's not got stripes. That one not, because it hasn't got stripes. This isn't a police car because the light's missing. This is not police car 'cos it hasn't got the noise.</p> <p>Note: Omission of the first clause (as in 'It's got no stripes') is not permissible given the example and stimulus 'Tell me about this one'.</p>	<p>Sentence with no subordinating conjunction but a clear subordinating relationship between the clauses (i.e. a conjunction like 'because' could be inserted and the sentence would make sense) e.g. That isn't a tiger. It's got no stripes. That not a tiger. He got no stripes on. This is not a police car. It's not got the shining light on.</p> <p>Post-modifying clause e.g. This is a police car that has had the light removed.</p> <p>Incomplete subordinate/second clause e.g. This is not a tiger because stripes.</p>	<p>Missing main clause e.g. It hasn't got any stripes.</p> <p>Missing subordinate/second clause e.g. That's a normal car. This is an unmarked police car.</p> <p>Two unrelated clauses e.g. That's not a tiger, it's a bear. That's a tiger, and that's a lion.</p> <p>Post-modifying phrase e.g. This is a police car with no light.</p>

Co-ordination

2 points	1 point	0 points
<p>Two correctly co-ordinated clauses with co-ordinating conjunction (e.g. and, then, but) e.g. She done her homework and ate her dinner. Kim was doing his homework and Kim was having his tea. He took off his coat then he put it on the peg. He arrived and he put his coat on a coat hanger.</p> <p>Construction with correct subordinate clause e.g. He had his tea when he had come in. (note that the tenses are required to be different in this construction – see note on 'mixtures of tenses' in next column)</p>	<p>No overt co-ordination e.g. She did her work, she ate her tea.</p> <p>Incorrect tense (e.g. present tense) e.g. Finishes homework and has tea. Just writing his homework and eating his chips with a drink. Takes his coat off and hangs it up.</p> <p>Mixtures of tenses/verb forms e.g. Wrote her diary and eat her dinner. Had her dinner and after she was doing homework. Take his coat off and hung it up.</p> <p>Immature/incorrect verb form e.g. Do her homework and eat her tea. Eat his dinner and eat his dinner again.</p>	<p>Combination of errors e.g. Finishes homework, has tea. (no co-ordination and incorrect tense) Take his coat off, hang it up. (incorrect tense, no co-ordination) He's take his coat off and goes to the classroom. (incorrect tenses, two different verb forms) He taked his coat off, he hanged his coat up. (immature verb forms, no co-ordination) Hang it up and he already done it. (incorrect tense, two different verb forms) He's taking his coat off and hanging it on said Sam. (incorrect tense, missing obligatory clause-level element) He write a letter and she's eating the dinner. (incorrect verb form, mixture of tenses)</p>

Table 3: Syntactic Formulation – scoring each item (continued)

Co-ordination (continued)

2 points	1 point	0 points
<p><i>Note: Ellipsis (=omission where the omitted element is understandable from the context) of one or both subjects is correct and not penalised due to the stimulus e.g. 'What did Sam do?' ∅ took off his coat and ∅ hung it up.*</i></p> <p><i>Verb ellipsis would also be correct e.g.</i> She finished her homework and ∅ her tea.*</p> <p><i>Ellipsis of non-obligatory objects is also correct and not penalised e.g.</i> She wrote ∅ and had a drink. (but not: he took off ∅; she watched ∅)</p>	<p>He taked his coat off and hanged it up.</p> <p><i>Only one clause e.g.</i> He put his coat away.</p> <p><i>Omission of obligatory clause-level element e.g.</i> She watched ∅. He took off ∅. He hung it on ∅.</p>	<p>Her work and him ate chips. (incorrect verb form, mixture of tenses)</p> <p>She's doing her homework and then her dinner. (incorrect tense, omission of verb in second clause)</p>

*Where ∅ denotes a missing element (obligatory or non-obligatory).

Post-modifying phrase

2 points	1 point	0 points
<p><i>Sentence including a post-modifying phrase with no verb e.g.</i> The car's next to a house with yellow on. The car is next to the house on the left.</p> <p><i>Sentence including post-modifying clause (i.e. with a verb) e.g.</i> The dog's next to the girl who's got pink hair.</p>	<p><i>Two separate clauses e.g.</i> The dog's next to a girl and she's got pink hair.</p> <p><i>Single noun phrase with a post-modifying phrase (i.e. not a full sentence) e.g.</i> The house with yellow curtains. The house with a square roof. The boy with purple hair. The girl with a wig on.</p>	<p><i>No post-modification e.g.</i> The car is next to the yellow house. The blue curtain house. The dog is next to the girl.</p>

Table 3: Syntactic Formulation – scoring each item (continued)

Reported speech plus catenative verb (= lexical verb followed by non-finite verb form)

2 points	1 point	0 points
<p><i>Reported speech plus catenative verb</i> e.g. He says he doesn't want to X. He says he's not going to X.</p>	<p><i>Direct speech</i> e.g. She say 'I not washing my dad's car again'. He's saying 'I don't want to pump that tyre'.</p> <p><i>No marking of direct/indirect speech but catenative verb present</i> e.g. I don't want to wash the car. She's angry, she don't want clean the car. She's not gonna wash the car. She not want to do the car. The lady wouldn't finish washing her car. He doesn't want to change the tyre. He don't like to drive the car.</p> <p><i>Reported speech but no catenative verb</i> e.g. She says the car's dirty. He said he's not changing the tyre.</p>	<p><i>Neither reported speech nor catenative verb</i> e.g. I'm not washing the car. I'm too tired.</p>

Conditionals

Note: Close attention needs to be paid to the internal structure of the sentence when marking these sentences.

'Base form' in these analyses refers to the uninflected form of the verb, also called the infinitive without 'to'.

- 2 points for the target structure:

Past perfect (= had + past participle) + [would + have + past participle] e.g.

If she had locked the door, her rabbit wouldn't have escaped.

If he'd run for the bus, he would have caught it.

If he had walked, then maybe he would have caught the bus.

- 2 points also for the following regional variants:

Past perfect + of/have (= had + of/have + past participle) + [would + have + past participle] e.g.

If she had have shut the cage, the rabbit wouldn't have run off.

If he hadn't of been late, he wouldn't have missed the bus.

[Would + have/of + past participle] + [would + have + past participle] e.g.

If she wouldn't have closed the cage, the rabbit would have run away.

If he would of stopped the bus, he would have got on it.

- 1 point for the following developmentally 'immature' structures:

Past simple + [would + have + past participle] e.g.

If she didn't do that, then that wouldn't have happened.

If he came earlier to the bus, he wouldn't have missed it.

If he ran for the bus, he would've caught it.

If he wasn't late for the bus, he wouldn't have been late.

If he was on time, he wouldn't have missed the bus.

[Did + have + past participle] + [would + have + past participle] e.g.

If she didn't have opened the lock, the rabbit wouldn't have escaped.

If he didn't have been late, he would have got the bus.

- 0 points for any other forms of conditional:

e.g.

If she would lock the cage, her rabbit wouldn't escape. (*[would + base form] + [would + base form]*)

If she had shut the cage door, her rabbit stayed inside. (*[past perfect (= had + past participle) + past simple]*)

If she didn't open the cage, the rabbit wouldn't jump out. (*past simple + [would + base form]*)

If he had run he would get the bus. (*past perfect (= had + past participle) + [would + base form]*)

If he'd went to the bus, he wouldn't have to walk. (*incorrect past perfect (= had + incorrect/immature past participle) + [would + base form]*)

If he didn't go on the bus, he wouldn't be late for school. (*past simple + [would + base form]*)

If he's been on time, he wouldn't have missed the bus. (*present perfect (= has + past participle) + [would + have + past participle]*)

The boy was running to the bus, it wouldn't happen if he missed the bus. (*[would + base form] + past simple*)

- 0 points for other modals/similar structures:

e.g.

She shouldn't let the bunny out, should have left it in.

If I'd run I might have got the bus.

If he'd run to the bus faster, he could have got on it.

I should have run for the bus and then I would catch it.

He wished he would get the bus.

- 0 points for any other constructions:

e.g.

The girl is catching the rabbit who got out the cage.

She is opening the gate but the rabbit jumped out and ran away.

Don't leave the door open and your rabbit won't escape.

Catched the bus and now he missed the bus.

The man's trying to get to the bus but it's rode off.

3.1.5 Semantic Decisions (SD)

1. Use the Answer Template to score the child's responses. Position the template carefully over the Record Booklet page, ensuring that the items and responses are aligned. Correct responses show through the window. Score 1 for a correct response and 0 for an incorrect response.
2. Sum the scores and enter the total at the bottom of the page in the Record Booklet. Transfer the total raw score to the appropriate box on the front of the Record Booklet.
3. The Answer Template may also be used to code the responses according to S = synonym (correct response), A = antonym, T = thematically related response, P/V = phonological or visually related response. These can be totalled and the frequency of each category entered in the Record Booklet in the boxes at the end of the Semantic Decisions subtest.

3.1.6 Non-Literal Comprehension (NLC)

1. Correct responses are indicated on the Record Booklet by a full stop (as described in Section 2.1.6, page 20). Score 1 for a correct response and 0 for an incorrect response.
2. Sum the scores and enter the total at the bottom of the page in the Record Booklet. Transfer the total raw score to the appropriate box on the front of the Record Booklet.

3.1.7 Narrative (NP and NS/D)

Propositions (NP)

Story events are listed in the Record Booklet next to the number of the corresponding picture. The events in this list have been selected to discriminate amongst different levels of ability in this age range.

1. After transcribing the narrative, read back through it and tick off all the propositions that the child has expressed in his/her story.
2. Sum the scores and enter the total number of propositions expressed at the bottom of the page in the Record Booklet. Transfer this raw score to the Narrative Propositions box on the front of the Record Booklet.

Important note: The child does not have to use the same words as the original story, but the tester must feel satisfied that the child intends to express the same or a very similar idea or meaning (proposition). The child's propositions do not have to be in the same order as those in the original story and may be produced while looking at a different picture than in the model.

Table 4 gives examples of acceptable propositions that the child might express in the story retelling.

Table 4: Narrative – examples of **acceptable propositions**

Picture 1

hot day	It was peaceful and hot. It was a sunny day in the forest. It was a nice hot day. It was sunny day. It's a hot summer's day in the jungle.	It was a hot sultry day in the middle of the forest. It's a really hot day. The monkey was enjoying the sunshine. One hot day in the forest. It was a warm sunny day.
insects chirping	He can only hear the insects. All that could be heard was the sound of insects chirping.	The birds were chirping and the insects. With all the insects chirping.
monkey hanging/ swinging peacefully	The monkey was hanging upside down on this tree. He was hanging on the tree. There was a monkey on the branch. He was just swinging. Swinging by holding the branch. He was happy swinging along. A monkey was hanging from a branch.	There was a monkey happily swinging from the branch of a tree. The monkey was swinging from back to front. He was sitting peacefully. There was a monkey hanging ... it was very peaceful.
it's so quiet	There was all quiet. It was nice and quiet. Peaceful sound in the forest.	The best thing I like about the forest is that it's quiet.

Picture 2

parrot chatters	The parrot was chatting and chatting. A parrot came and started talking to him. Suddenly a parrot came and started to talk to her. He/the parrot talked so much. He kept on talking and talking.	A parrot came along squawking. The parrot started chattering. He was doing too much talking. The parrot was talking with the monkey. The parrot started off talking to the monkey.
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Table 4: Narrative – examples of **acceptable** propositions (continued)

Picture 2 (continued)

monkey cross	She got really angry. The monkey got annoyed. She couldn't bear it. The monkey started to get tired of it.	After a while the monkey got very cross. The monkey didn't like it. The monkey was fed up with the parrot.
yelled leave	The monkey said go away. The monkey told the parrot to go away. She shouted at it. The monkey asked him to leave. She said 'Please leave me alone.'	She said 'Why don't you go away?'. 'Please can you leave my tree.' 'You must leave.' 'Why don't you leave this tree?' 'Get out of my tree.'
might leave	It wouldn't leave (until ...) 'I will leave.' The parrot wouldn't leave unless the monkey ... 'I'll only go if you ...'	'I will go away (with the treasures).' 'If you go and (get me the treasures), I will go off the tree!' 'I might leave if you ...' 'I will get out of the tree if you (find me the treasures).'
bring treasure	'Get me the treasures of the forest.' 'Only if you get me the treasure from the forest.' 'You have to find me some treasures.'	'You must find the fruits of the rainforest.' 'Give me a treasure.' He wanted treasure. 'Find me the treasures.'

Picture 3

doesn't know what he meant	The parrot didn't know what he meant. The monkey didn't understand what the treasures were.	The monkey did not know what the treasure was.
prepared to go	But if that was the only way she was going to go, he did it. That was the only way that the parrot would leave. 'I'll find them if that will make you go away.'	But he went along anyway because that was the only way he would get the bird away from the tree. So, that was the only way to get the parrot to go then the monkey did it.
left tree	He went down and found a pineapple. (Credit too for picture 4 'finds pineapple'.) He scampered off. The monkey went off (and found a pineapple). He went off anyway.	He went deep into the rainforest and he went away. The monkey set off. He came down from the tree.

Table 4: Narrative – examples of **acceptable** propositions (continued)

Picture 4

finds pineapple	The monkey found a big juicy pineapple. She found a fruit. She saw a pineapple tree.	She got a pineapple. (He went down) and found a pineapple.
treasure for parrot	'That will be a treasure for the parrot' she said. She thought it would be a good treasure for the bird. She found a pineapple which she thought was treasure.	'This is treasure' he thought. He thought it would be nice for a treasure. This will be a present for the parrot. This must be the treasure.

Picture 5

monkey tired	On the way he was tired. Then she became very tired.	The monkey was tired. The monkey got tired after a while.
reaches village	When she reached the jungle cottage. (The monkey ...) and ended up in the jungle worker's house. He walked to the village. He walked along and came across the village.	He found the parrot's village. He went down to the village. He came to a jungle house where the people lived. She went to the forest worker's house.
has idea	The monkey had a good idea. He started to think of ideas. It gave her an idea.	He saw a scarf and thought of what he could do. She found a scarf and thought of something.

Picture 6

not expect monkey	The parrot was amazed. The parrot was astounded.	He didn't think the monkey would come back.
not treasure	'This ain't no treasure.' 'This is not treasure.' The parrot replied 'That is not the treasure of the jungle'.	The parrot didn't think it was a treasure of the forest. 'That's hardly like treasure.'
walk this way	'Close your eyes and walk this way.' 'Come along this branch and I'll show you it.' 'Walk along this branch with your eyes closed.'	'Close your eyes and follow me.' 'Come with me, I've got a special present.'
real treasure	'The real one is under this golden scarf.' 'The treasure is here under the curtains.' 'I've hid the treasure behind this cloth.'	'I've got some real treasure.' 'The treasures are behind this scarf.' 'Behind this scarf is the real treasure.'

Syntactic and discourse complexity (NS/D)

The syntactic and discourse complexity scoring scheme consists of a list of grammatical and discourse structures which have been selected to discriminate amongst different levels of ability in this age range.

1. Look through the transcript for an example of each structure which appears in the 'Narrative Syntax/Discourse Features Analysis' section of the Record Booklet. Tick off the structure in the Record Booklet, and write down the child's example in the adjacent column. Each *different* structure which appears in the child's story is allocated 1 mark. The child may use a structure more than once in the story, but no further marks will be given for it. Score 1 mark for the presence of a construction (no matter how many times it is used).
2. When the whole transcript has been checked, sum the number of features present and enter this total raw score for syntax and discourse features on the front of the Record Booklet.

Guidelines for syntactic analysis

The Narrative syntactic analysis is based on the framework used in the *Language Assessment, Remediation and Screening Procedure (LARSP; Crystal et al., 1976)*.

The main analysis is carried out at clause level. Utterances are first split into clause-level components such as:

- subject (S)
- object (O) – direct (Od) and indirect (Oi) objects
- verb (V)
- complement (C)
- adverbial (A)

e.g.

She led the parrot along the branch.
S V O A

It was a hot day in the forest.
S V C A

Clause elements may be in a different order to the abbreviation.

e.g.

After some time she found a pineapple.
A S V O (=SVOA)

SVOiOd

e.g.

The monkey gave the pineapple to the parrot.
S V Od Oi

Note: In SVOiOd constructions, the order of direct and indirect object can be reversed. Compare the following examples.

e.g.

The monkey found a pineapple for the parrot ➔ The monkey found the parrot a pineapple. So this is an SVOiOd construction.

The monkey found a pineapple for dinner ➔ The monkey found dinner a pineapple. So this is **not** an SVOiOd construction.

Scoring note: SVOiOd can be counted in instances where the subject is 'understood', e.g. 'Find me three treasures'; 'The parrot told her to go and find him the treasure'.

Examples of acceptable structures	Unacceptable structures
'If you find me the treasure of the forest.' 'Bring me the treasure.' ('understood' subject) 'Until you get me some treasure.' 'I've brought you some treasure.' He showed the parrot the fruit. The monkey gave the pineapple to the parrot. 'I'll come and show you where the treasure is.' And he gave it to the parrot.	The monkey put her fingers in her ears. (SVOA)

SVC

e.g.

The parrot got angry.
S V C

It was quiet.
S V C

Note: In SVC constructions, subject and complement have the same referent, i.e. refer to the same entity. Compare the following examples.

He is a parrot. ('He' and 'a parrot' refer to the same entity.)
S V C

She hates parrots. ('She' and 'parrots' refer to different entities.)
S V O

Verbs which turn up often in complement constructions are 'be' (as a lexical verb, not as an auxiliary), 'become', 'seem', 'look' (as in 'He looked unhappy'), and 'get' (as in 'He got tired').

Examples of acceptable structures	Unacceptable structures
It was a lovely day. There was a monkey. It was a girl. The monkey got very upset. She got really cross. She wasn't too sure. 'That isn't real gold.' 'This is my real treasure.' 'This is not looks like treasure.'	The monkey was hanging. (SV) The monkey was on the tree. (SVA) The parrot was in the cage. (SVA)

SVCA/SVOC

e.g.

That will be a treasure for the parrot.
 S V C A

Note: In this construction, 'that' and 'a treasure' refer to the same entity, thus they are S and C respectively.

The parrot made the monkey angry.
 S V O C

Note: In SVOC ('object complement') constructions, the object of the clause and the complement refer to the same entity. Thus, in the above example, 'the monkey' and 'angry' have the same referent.

Examples of acceptable structures	Unacceptable structures
It was a hot day in the forest. It was a nice sunny day in the jungle. Once there was a little monkey. There was a monkey hanging from a tree. It's nice and peaceful around this time of day. Maybe the parrot will be kind. The monkey was surprised that the parrot was back. 'This isn't treasure behind the curtain.' 'Of course it is not treasure.'	The monkey was swinging on the branch. (SVA) The monkey put her fingers in her ears. (SVOA) The parrot was annoying the monkey for a long time. (SVOA) The parrot was shut in the cage. (SVA)

Future time

These are expressions that indicate future time. These can be using 'will'.

e.g.

I will go.
 That'll shut him up.

Other examples include present progressive indicating future time and the use of 'going to'.

e.g.

I'm not leaving.

I'm not going to let you out.

He's not going to be talking.

Examples of acceptable structures	Unacceptable structures
'I <u>won't leave</u> until you get my treasure.'	The monkey thought he <u>wouldn't be doing</u> any more talking. (change of tense due to reported speech)
'I'm <u>not going to leave</u> .'	
'This <u>will be</u> good.'	
'I'll <u>take</u> you to the real treasure.'	
He <u>won't be talking</u> much.	

Non-finite verb

Non-finite verb forms are those which do not carry an inflection for tense or person. They co-occur with a lexical verb (i.e. not an auxiliary) which **is** inflected for person/tense (i.e. finite).

e.g.

She yelled at him to leave.
 finite verb non-finite verb

A parrot began chattering.
 finite verb non-finite verb

The monkey went to find the treasure.
 finite verb non-finite verb

Examples of acceptable structures	Unacceptable structures
A parrot started <u>chatting</u> .	The monkey was swinging. (auxiliary plus one lexical verb) He's not going to talk any more. (auxiliary plus one lexical verb) He wouldn't leave. (modal auxiliary plus one lexical verb) He had to shut up. (modal auxiliary plus one lexical verb)
'I want you <u>to get</u> some jungle treasure.'	
Kept on <u>talking and talking</u> .	
She told him <u>to be quiet</u> .	
The monkey wanted the parrot <u>to go away</u> .	
'If you want me <u>to leave</u> ...'	
He was running <u>to find</u> treasure.	
She was prepared <u>to do it</u> .	
He went back <u>to show</u> .	

Modal verb

Use of one or more of the following – can, could, would, have to, may, might, should, shall, etc.

e.g.

The parrot couldn't talk.

'Why can't I stay here?'

'I might leave if ...'

The monkey had to shout.

Scoring note: 'Will' is not counted as a modal in this analysis.

Examples of acceptable structures	Unacceptable structures
<p>The only sound she <u>could</u> hear was squawking.</p> <p>'I <u>might</u> leave.'</p> <p>She <u>had to</u> leave the tree.</p> <p>'I <u>wouldn't</u> call them treasures.'</p> <p>That <u>ought to</u> shut him up.</p> <p>'That <u>should</u> keep you quiet.'</p>	<p>That <u>will</u> shut him up. (will here counts as an auxiliary, not a modal – count as 'future time')</p>

Two noun phrase pre-modifying elements

Use of two elements to pre-modify a noun. These are typically **intensifiers** and/or **adjectives** – Adj Adj N, Int Adj N.

e.g.

a lovely juicy pineapple
Adj Adj N

a beautiful golden scarf
Adj Adj N

a very big pineapple
Int Adj N

a really lovely day
Int Adj N

Examples of acceptable structures	Unacceptable structures
<p><u>hot sunny</u> day</p> <p>a <u>big juicy</u> fruit</p> <p>a pineapple with a <u>green spiky</u> crown</p> <p>a <u>nice silk</u> curtain</p> <p>a <u>lovely golden</u> scarf</p> <p>a <u>big woolly</u> scarf</p>	<p>a big big pineapple (two different elements required)</p>

Post-modifying phrase

e.g.

a pineapple with a spiky green crown
post-modifying phrase

A post-modifying **phrase** modifies the preceding noun phrase but does not contain a verb.

e.g.

a scarf with golden thread

Examples of acceptable structures	Unacceptable structures
<p>Once there was a little monkey <u>having a fun time</u>.</p> <p>There was a monkey <u>hanging from a tree</u>.</p> <p>The only sound she could hear was the insects <u>chirping</u>.</p> <p>He came to the jungle house <u>where the people lived</u>.</p> <p>She saw something <u>that gave her a very good idea</u>.</p> <p>He saw a scarf <u>hanging up on the washing machine</u>.</p> <p>a red scarf with golden lace <u>wrapped all around it</u></p> <p>a brilliant scarf <u>made of gold and silk</u></p> <p>He enjoyed the treasures <u>he had found</u>.</p>	<p>a lovely scarf <u>with gold all over it</u> (post-modifying phrase)</p> <p>it was peaceful in the forest, <u>which was nice</u> (subordinate clause – see below)</p>

Subordinate clause

e.g.

The monkey was happy
main clause

because the parrot was quiet
subordinate clause

If you get me some treasure
subordinate clause

I will leave
main clause

Note: Only a fully independent clause counts here, usually with a subordinating conjunction such as because, when, who, where, if, until, etc. Compare this with the definition of post-modifying clause above.

Scoring note: Direct speech (e.g. He said 'Get me some treasure') and reported speech (e.g. He said he would leave the tree; He thought the parrot wouldn't keep his word) are not counted as subordinate clauses, although what is said is strictly a subordinate clause. Instead, these features are counted as discourse features (see below).

Examples of acceptable structures	Unacceptable structures
<p>It was so nice <u>when he was singing</u>.</p> <p>'What I like <u>about today</u> is that it's so quiet and peaceful.'</p> <p>He kept on talking and talking <u>until the monkey was really annoyed</u>.</p> <p>She putted her hands in her ears '<u>cos it was so noisy</u>.'</p> <p>'I won't get lost <u>until you bring me the treasures of the forest</u>.'</p> <p>'<u>If you get me some treasure then</u> I'll might let you have some peace.'</p> <p>'<u>If this is the only way to get rid of him then</u> I will do it.'</p> <p>He planted it in a hole <u>while he went looking</u>.</p> <p>'Lift up the scarf and see <u>what's in it</u>.'</p> <p>He locked the cage <u>so the pigeon can't get out</u>.</p>	<p>The monkey shouted at the parrot <u>but the parrot wouldn't leave</u>. (co-ordination)</p> <p>The parrot said 'Go and get some treasure' <u>so the monkey went</u>. (co-ordination; compare with 'so' used in a subordinating construction in the acceptable examples)</p> <p>There was a monkey <u>hanging on a tree</u>. (post-modifying clause)</p>

Guidelines for analysis of discourse features

Discourse features are specific features of the narrative which the child may use to enliven the story and to relate events to one another. Some of these are stylistic features which emphasise key aspects of the story. Others are types of speech acts which appear in the original text and may or may not be reproduced by the child.

As with the syntax list, the tester should look for examples in the transcript of the child's story, check off that feature if it appears and give 1 point for each feature present.

'It' as 'empty' subject

'It' can be used as an 'empty subject' in SVC constructions, that is not referring directly to a participant in the story.

e.g.

It was a quiet day.

It was getting dark.

It was lovely and peaceful in the forest.

Examples of acceptable structures	Unacceptable structures
<u>It</u> was so nice when he was swinging. <u>It</u> was a hot summer's day. <u>It</u> was dead quiet.	'That's no treasure, <u>it's</u> a pineapple' said the parrot. (referent is clear)

'There' as 'empty' subject

'There' can be used as an 'empty subject' in SVC constructions.

e.g.

There was a shawl on the line.

'There's nothing you can do.'

Examples of acceptable structures	Unacceptable structures
<u>There</u> was a monkey hanging on a tree. <u>There</u> was a sound. ' <u>There</u> is some treasure under this nice silk curtain.'	The real treasure is over <u>there</u> . (referent is clear)

Direct speech

This refers to quoted speech of a participant in the story.

e.g.

The parrot said to her 'I will go if you bring me three treasures of the forest'.

'Why can't I stay here for a while?' asked the parrot.

Examples of acceptable structures	Unacceptable structures
She said 'Oh get lost'. 'I want it now' said the parrot. 'Go away' she shouted. The parrot said 'Go and find a treasure of the jungle'. She said 'I don't want to be disturbed'. He says 'Close your eyes a minute'.	She told the parrot to go away. (reported speech)

Reported speech

This refers to speech which is not directly quoted but reported by one of the characters.

Note that the tenses and pronouns are different from those in the equivalent direct speech constructions. Compare the following examples.

e.g.

The parrot told the monkey that he wouldn't leave. (reported speech)

'I won't leave' said the parrot. (direct speech equivalent)

The monkey thought the pineapple was a treasure. (reported speech)

'The pineapple is a treasure' thought the monkey. (direct speech equivalent)

He said he would go and find a treasure. (reported speech)

'I will go and find a treasure' he said. (direct speech equivalent)

Scoring note: Do not additionally count these structures under 'Embedded/post-modifying clause'.

Examples of acceptable structures	Unacceptable structures
The monkey told the parrot to go away. He thought it would be a good treasure. The parrot was thinking the monkey would never find the tree again. The monkey said the parrot wouldn't be speaking for a long time. The parrot asked why he should leave. The monkey demanded that the parrot would leave. It thought the monkey wouldn't be able to find its way back. He thought that he'd pick one.	He shouted at the parrot but the parrot wouldn't go away. (no direct or indirect speech) He told the parrot 'Go away'. (direct speech) 'That'll be a good treasure' he thought. (direct speech)

Examples of acceptable structures	Unacceptable structures
'Follow me, the treasure is all the way over here.' The monkey said 'Close your eyes'. The monkey said 'Go and get it'. 'Look round, the real treasure's behind there.' 'Come with me.' 'Go and find the treasures of the forest.' 'Get me the treasures of the forest.' 'Close your eyes and walk this way.' 'Give me your hand and come here.' 'Go and find me the hidden treasures.'	The monkey told the parrot to go away. (no command structure) 'Will you leave my tree!' said the monkey. (question form, although force of utterance is a command) 'You must go and find treasure.' (statement form, although force of utterance is a command)

Topicalisation/emphatic order

An element other than the subject is brought to the beginning of the sentence.

e.g.

After a short period of time she came to the village.
 A S V A

Just round the corner there was a village.
 A S V C

If you want me to go you have to find me treasure.
 A S V Oi Od

Note: Although some direct speech constructions involve topicalisation, they are not counted here. Count them under 'Direct speech' instead.

e.g.

'Go away' said the monkey.
 O V S

Examples of acceptable structures	Unacceptable structures
<u>Once upon a time</u> there was a monkey. <u>One day</u> there was a monkey. <u>When the monkey was sitting down</u> , the parrot ... 'If you want me to leave you'll have to find the treasures for me.' <u>Out of nowhere</u> came a parrot. <u>Along</u> came a parrot. 'Here I am again.' 'Under this curtain there's the real treasure.'	'Be quiet!' shouted the monkey. (direct speech – not counted here) <u>Then</u> a parrot came. (count under 'Connectivity' instead)

Connectivity

This section looks for expressions used to link story episodes such as then, so, afterwards, after that, next, but, etc.

e.g.

He told her to go away, but the parrot said 'Only if you bring me the treasures of the forest'.

He said 'Give me the treasures of the forest'. So he went looking for lots of fruit and things.

And then she goes back to the tree and says to the parrot ...

Temporal connectives like 'first', 'suddenly' and 'finally' also count here, as do stereotypical phrases such as 'all of a sudden'.

Do not count 'and' on its own. Although it is a connective, 'and' is not counted in this analysis as it does not tend to discriminate well among levels of ability.

Scoring note: Note each different connective expression used in the child's story. If the child uses three or more different connectives, score 1. If the child uses 0, 1 or 2 different connectives, score 0.

Examples of acceptable structures	Unacceptable structures
<p>The monkey didn't know what the parrot meant, <u>but</u> she went anyway.</p> <p><u>At last</u> she came to a village.</p> <p>The parrot said 'That's not real treasure', <u>so</u> the monkey said 'Come with me'.</p>	<p>She sat down <u>because</u> she was tired. (subordinating conjunction – score this construction under 'Subordination' instead)</p> <p>She put some pineapple in his beak <u>so</u> he couldn't talk any more. ('so' here is used as a subordinating conjunction – in the sense of 'in order that' – score under 'Subordination' instead)</p> <p><u>And</u> they all lived happily ever after. (do not count 'and' on its own)</p>

3.2 Obtaining test scores

After scoring the responses as described above, enter the raw scores for all subtests in the appropriate boxes on the front cover of the Record Booklet.

Turn to the tables of standard scores in the Appendix. For each subtest raw score look up the corresponding standard score in the table corresponding to the child's age group and enter it in the box next to the subtest raw score on the front cover of the Record Booklet (note that Narrative Propositions and Narrative Syntax/Discourse are scored separately). Look up and enter the associated confidence band and percentile rank for each subtest from the same table.

3.2.1 Main Test

If the Main Test is being performed, sum the standard scores of the five subtests in the Main Test. Now use the table of composite standard scores in the Appendix to convert this total figure to a Main Test standard score and enter this in the box on the front of the Record Booklet. Using the same table look up the confidence band and percentile rank corresponding to the Main Test standard score and enter these in the appropriate boxes. The Main Test is now scored completely.

3.2.2 Extended Test

If the Extended Test is being performed, sum the standard scores of **all** the subtests. Now use the table of composite standard scores in the Appendix to convert this total to an Extended Test standard score and enter this in the box on the front of the Record Booklet. Using the same table look up the confidence band and percentile rank corresponding to the Extended Test standard score and enter these in the appropriate boxes. The Extended Test is now scored completely.

The subtest profile may be filled in whether the Main or Extended Test is used. The profile will obviously be more comprehensive if all subtests are administered. Filling in the profile is not compulsory, but can be used as a visual device to explain results to other professionals or carers. To complete the profile place a mark at the standard score value for each subtest and join the marks with a single line. Examples of completed profiles are presented and discussed in Section 3.4 (page 72) and in the case studies in Section 4 (page 81). It should be noted that there are limitations on the extent to which differences between individual subtest standard scores can be interpreted and profiles should be treated with caution (see Section 3.3, below). If the profile is to be used to compare individual subtest standard scores, then the confidence bands for individual subtest standard scores can be drawn on the profile, and the differences compared using the information in Tables 5 and 6 (pages 69 and 70). (See Figure 4, page 68 for an example.)

3.3 Statistical interpretation of test scores

3.3.1 Norm-referenced standard scores

ACE 6–11 norm-referenced standard scores are used to compare an individual child's performance with the typical performance of a representative sample of children in the same age group.

Subtest standard scores

Standard scores on each ACE 6–11 subtest have a normal distribution with a mean of 10 and standard deviation of 3. Thus for any particular subtest the standard scores achieved

by children of a given age with normal language development will tend to be symmetrically distributed around a score of 10. About two out of every three normally developing children will score between 7 and 13, and ninety-five out of every hundred will score between 4 and 16. The average standard score of 10 is shown on the profile by a bold line.

Main Test standard scores

The Main Test standard scores have a normal distribution with a mean of 100 and standard deviation of 15. Thus the standard scores achieved by children of a given age with normal language development will tend to be symmetrically distributed around a score of 100. About two out of every three normally developing children will score between 85 and 115, and ninety-five out of every hundred will score between 70 and 130.

Extended Test standard scores

The Extended Test standard scores, like those of the Main Test, have a normal distribution with a mean of 100 and a standard deviation of 15.

3.3.2 Confidence bands

A confidence band provides a range within which a child's 'true' ability score is most likely to lie, given the standard score s/he achieved on the test. The standard error of measurement (SEM) is used to compute a confidence band for a child's test score. There is a 95% probability that the child's true ability score will be within 2 SEMs of his/her score on the test. As the SEM for the ACE 6–11 Main Test at age 8 is 5, this means that you can be 95% confident that a child who scored 100 on the Main Test is within the true ability range of 90 to 110 (that is $100 \pm 2 \text{ SEMS}$).

We recommend that a confidence band is routinely reported alongside a standard score, as the standard score on its own can give a false impression of the precision of the test result.

80% and 95% confidence bands have been provided for ACE 6–11. These appear alongside each score in the tables of standard scores in the Appendix. One way of understanding confidence bands is to imagine testing the same child on five different versions of ACE 6–11 (all with the same structure, but with different individual question items). Four of the five scores achieved by the child (on either the whole test or any specific subtest) would be expected to fall within the range given by the 80% confidence band (80% is the same as four out of five). The 95% confidence band means that, if the same child could be tested 20 times, you could expect 19 of the test scores to be within the range given by the 95% band.

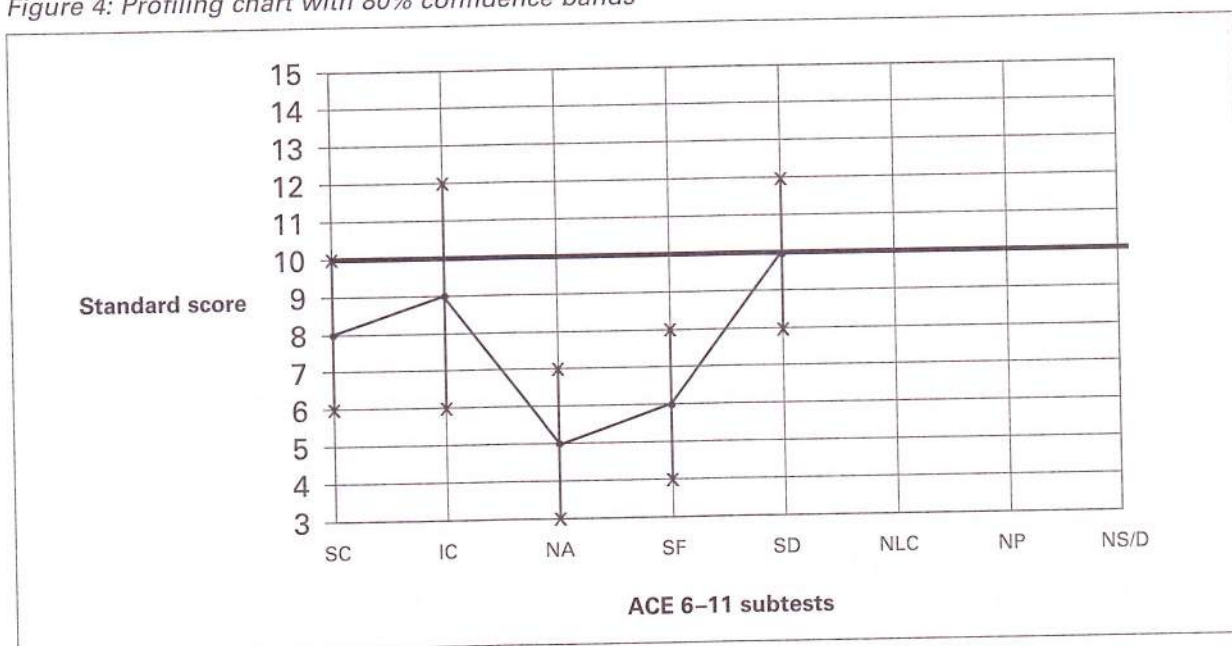
We suggest that 95% confidence intervals are used when you wish to obtain an indication of the accuracy of a single score, most notably a child's standard score on the Main Test or Extended Test. The preferred use for 80% confidence intervals is for making visual

comparisons between a child's score on one subtest and his or her score on another subtest, as explained below.

Using the 80% confidence bands to compare scores on different subtests

First plot the 80% confidence bands around each subtest score on the child's profile chart (see Figure 4). Where the confidence band for one subtest overlaps with the confidence band for another subtest (see example below), the two subtest scores are not substantially different (that is, it cannot be said with confidence that the child is performing differently on one subtest compared to the other). Where the confidence bands for two subtests **do not overlap**, the difference can be regarded as potentially important. Such instances can be tested for statistical significance by calculating the difference between the two subtest standard scores and comparing this with the values for a significant difference given in Table 5 (5% significance level) or Table 6 (1% significance level). If there are reasons to *expect* that the child would perform differently on the two subtests, the 5% level (Table 5, page 69) can be used. However, if there are no reasons to expect such a difference then it is better to be cautious and use the 1% significance level (Table 6, page 70).

Figure 4: Profiling chart with 80% confidence bands



As an example, suppose the profile chart in Figure 4 represents test results for a 7-year-old child. The practitioner has used the ACE 6-11 Main Test (rather than the Extended Test) and has plotted the subtest scores and 80% confidence bands (indicated by a cross above and below each subtest score) on the profile. The 80% confidence band around the child's score of 10 on Semantic Decisions ranges from 8 to 12, and the 80% confidence band around the score of 5 on Naming goes from 3 to 7. The lower end of the band for Semantic Decisions is above the upper end of the band for Naming, therefore the two confidence bands do not overlap.

Table 5: Minimum difference between two subtest standard scores required for statistical significance at the 5% level

	Sentence Comprehension	Inferential Comprehension	Naming	Syntactic Formulation	Semantic Decisions	Non-Literal Comprehension	Narrative Propositions	Narrative Syntax/Discourse
Sentence Comprehension		5.4	4.4	4.5	4.7	5.0	4.6	4.7
Inferential Comprehension	5.4		5.0	5.1	5.3	5.6	5.2	5.3
Naming	4.4	5.0		4.0	4.3	4.6	4.1	4.3
Syntactic Formulation	4.5	5.1	4.0		4.3	4.7	4.2	4.3
Semantic Decisions	4.7	5.3	4.3	4.3		4.9	4.4	4.6
Non-Literal Comprehension	5.0	5.6	4.6	4.7	4.9		4.7	4.9
Narrative Propositions	4.6	5.2	4.1	4.2	4.4	4.7		4.4
Narrative Syntax /Discourse	4.7	5.3	4.3	4.3	4.6	4.9	4.4	

Note: These differences are based upon SEMs averaged across all age groups.

Table 6: Minimum difference between two subtest standard scores required for statistical significance at the 1% level

	Sentence Comprehension	Inferential Comprehension	Naming	Syntactic Formulation	Semantic Decisions	Non-Literal Comprehension	Narrative Propositions	Narrative Syntax/Discourse
Sentence Comprehension		7.2	5.8	5.9	6.2	6.6	6.0	6.2
Inferential Comprehension	7.2		6.6	6.7	7.0	7.3	6.8	7.0
Naming	5.8	6.6		5.3	5.6	6.0	5.4	5.6
Syntactic Formulation	5.9	6.7	5.3		5.7	6.1	5.5	5.7
Semantic Decisions	6.2	7.0	5.6	5.7		6.4	5.8	6.0
Non-Literal Comprehension	6.6	7.3	6.0	6.1	6.4		6.2	6.4
Narrative Propositions	6.0	6.8	5.4	5.5	5.8	6.2		5.8
Narrative Syntax/Discourse	6.2	7.0	5.6	5.7	6.0	6.4	5.8	

Note: These differences are based upon SEMs averaged across all age groups.

Furthermore, suppose the practitioner had reason, even before doing the test, to expect that the child would have a particular problem with Naming but not Semantic Decisions. The therapist therefore consults Table 5 (5% significance level), and finds that a difference in scores between Semantic Decisions and Naming of 4.3 points or above is statistically significant at the 5% level. The observed difference for this child is 5 points. This is greater than 4.3 and, therefore, the therapist can conclude that the child is performing significantly lower on Naming compared to Semantic Decisions.

This profile also reveals that the upper end of the confidence band around the Syntactic Formulation score is at the **same level** as the lower end of the band around Semantic Decisions. These two bands are also taken to be **non-overlapping**. Table 5 indicates that a difference of 4.3 points or more is required for a Syntactic Formulation score to be significantly different from a Semantic Decisions score at the 5% level. The difference in scores for this child is 4 points and is therefore not significant. This is actually a borderline case, in that the difference just fails to reach the value required for statistical significance. In such situations the practitioner should bring other knowledge to bear to decide whether, although not statistically significant, the child's performances on the two subtests are substantively different. For example, this child's scores on both subtests, which might be considered to be expressive in nature (Naming and Syntactic Formulation), are lower than scores on any of the three subtests which might be considered to require mainly comprehension skills (Sentence Comprehension, Inferential Comprehension and Semantic Decisions). Naming and Syntactic Formulation are also both below the 'normal range' of 7 to 13 points. On the basis of this (and possibly other) information about the child, the practitioner might conclude that the child has expressive language problems which are *clinically* more significant than comprehension problems.

3.3.3 Percentile ranks

The percentile rank gives the percentage of children who obtain a standard score equal to or below that of the child who has been tested. Percentile ranks for the individual subtests and for the Main Test and Extended Test appear in the standard score tables in the Appendix alongside the standard score to which they correspond. For example, suppose a 10-year-old child obtains a standard score of 88 on the Main Test. The relevant tables in the Appendix indicate that this equates to a percentile rank of 21, which means that 21% of children of the same age group score at or below 88 on the Main Test.

One advantage of using percentile ranks is that many people find the idea of a child's performance being better than that of a certain percentage of other children of the same age much easier to understand than the notion of standard scores. The main drawback to percentile ranks is, however, that they can be very variable. For standard scores around the middle of the scoring range, a small change in standard score can result in a large change in percentile rank: for example, a standard score of 100 on the Main or Extended Test equates to a percentile rank of 50, while a standard score of 110 equates

to a percentile rank of 75. For this reason great care must be taken when comparing children on the basis of their percentile ranks, since what might look like a large difference in percentile terms may actually amount to no more than a few standard score points.

3.4 Clinical interpretation of test scores

3.4.1 What is a language impairment?

There is little agreement in the literature as to what constitutes a language impairment. Some authorities take one standard deviation below the mean as a cut-off point between 'normality' and impairment; others are more stringent and insist on two standard deviations below the mean. The use of cut-off points in this way is always arbitrary. In practice there is usually more than one source of evidence which will confirm the diagnosis of language impairment, not least of which is the practitioner's experience with other children who have this diagnosis.

ACE 6–11 does not set a single point for the identification of language impairment. It is important to remember that any score can only be interpreted by comparison with the average typical child (that is, a population mean). In a typical population the scores of 16% of children would fall at or below one standard deviation below the mean.

The prevalence of language delay or impairment is calculated from epidemiological studies of the whole population at around 7.4% (8% for boys and 6% for girls) (Tomblin *et al.*, 1997), so it could be estimated from this that language impairment 'appears' between one and two standard deviations below the mean on a language test. However this remains an unsatisfactory and inaccurate definition.

Another approach is to consider the accepted conventions of average and below average performance on standardised tests. For the ACE 6–11 Main and Extended Tests the following descriptions of ability are linked to standard scores:

69 and below	Extremely low score
70–84	Moderately low score
85–115	Average score
116–130	Moderately high score
131 and above	Extremely high score

3.4.2 ACE 6–11 clinical sample

The performance of a number of children who had been identified as language-impaired and who were receiving specialised support (although circularity of definition cannot be avoided in this argument) was profiled using ACE (6–11), to confirm that the test was able to identify children with language impairments.

The ACE 6–11 clinical sample scores were calculated and the means and ranges of standard scores attained for the Main Test, Extended Test and individual subtests are set out in Section 5.9 (page 111). It should be noted that **this is a relatively small sample and is not necessarily representative of the population of children with language impairments**. It does, however, provide some indication to the practitioner that a case falls within the range of scores detected in a clinical population.

3.4.3 Profiling individual cases on ACE 6–11

The primary purpose of ACE 6–11 is to identify children with language delays and impairments. ACE 6–11 can also provide information about a range of language skills, and a profile of standard scores on subtests can be made using the chart on the front of the Record Booklet. Illustrative profiles of children who have language impairments and children with typical language development are presented below.

It should be noted however that there are limitations on the interpretation of these profiles. Most children with language impairments or delays present with problems across many aspects of language and, whereas the profile will present a pattern of strengths and weaknesses to a degree, it has not been determined that there are distinct ACE 6–11 clinical profiles which fit with specific diagnostic categories such as 'phonological-syntactic disorder' or 'pragmatic language impairment'. Further research is required to ascertain the goodness of fit of profiles with specific diagnoses, but initial clinical data suggest that such links are very difficult to make given the heterogeneous nature of language impairments. The profiles do however present information about *individual patterns* of strengths and weakness.

Analysis of data from the ACE 6–11 clinical sample suggests that a small number of children who are defined as language-impaired may have a profile of subtests with scores all within the normal range. This is suggested to be a pattern which may occur when the child is towards the top end of the ACE 6–11 age limits (that is 11 years old) or when the type of language impairment is not accessible within the limits of what ACE 6–11 can assess (say, a high level pragmatic impairment). This does not mean that these children no longer have language impairments; the presence of such children in specialised educational provision probably indicates that they are still slow to process language (although they may be doing this with improved resources) and require continuing support in accessing the curriculum. This is an issue rarely addressed in research.

Clinical sample profiles

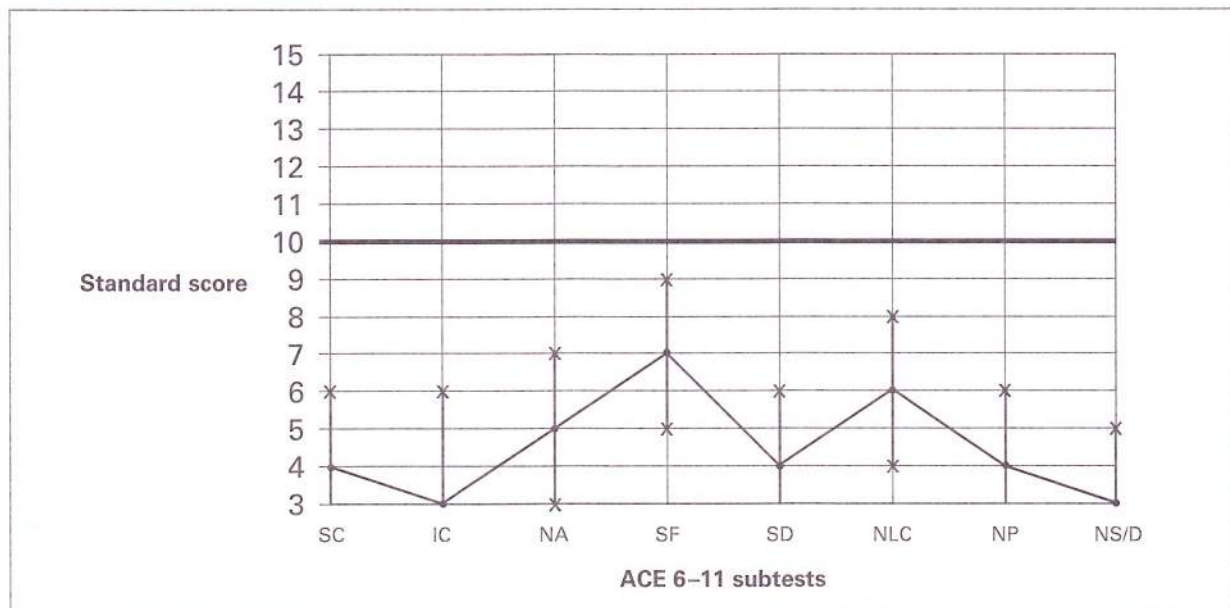
The following profiles were taken from the clinical sample drawn during the development of ACE 6–11. Information from the children's speech and language therapists and teachers is presented alongside the profiles.

Child 1

Child 1 is female and aged 6 years 8 months. She was reported to have a broad range of language difficulties in both receptive and expressive domains (including syntactic and semantic development), but not to have pragmatic problems.

The profile shows performance on ACE 6–11 at below average across all subtests, with some scores in the extremely low range. Although Non-Literal Comprehension and Syntactic Formulation show a *trend* towards being better than other abilities, examination of the 80% confidence bands indicates that they overlap and that therefore there is no statistically significant difference between these abilities. Figure 5 shows her profile.

Figure 5: Profile of clinical sample Child 1

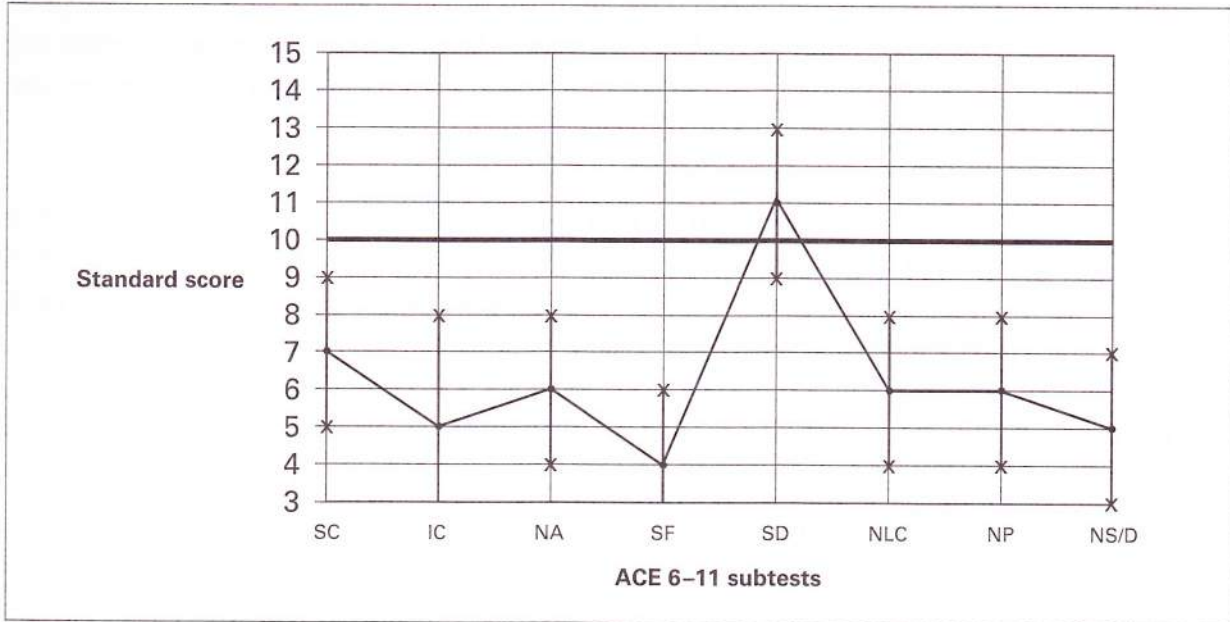


Child 2

Child 2 is female and 8 years old. She was reported to have phonological and expressive deficits across semantic, syntactic and discourse domains, but relatively good comprehension.

The ACE 6–11 profile shows a generally low average profile with significant weakness in Syntactic Formulation and Narrative and a peak in Semantic Decisions. Examination of the 80% confidence bands suggests that there is a statistically significant difference between Semantic Decisions and all other subtests except Sentence Comprehension. Figure 6 shows her profile.

Figure 6: Profile of clinical sample Child 2

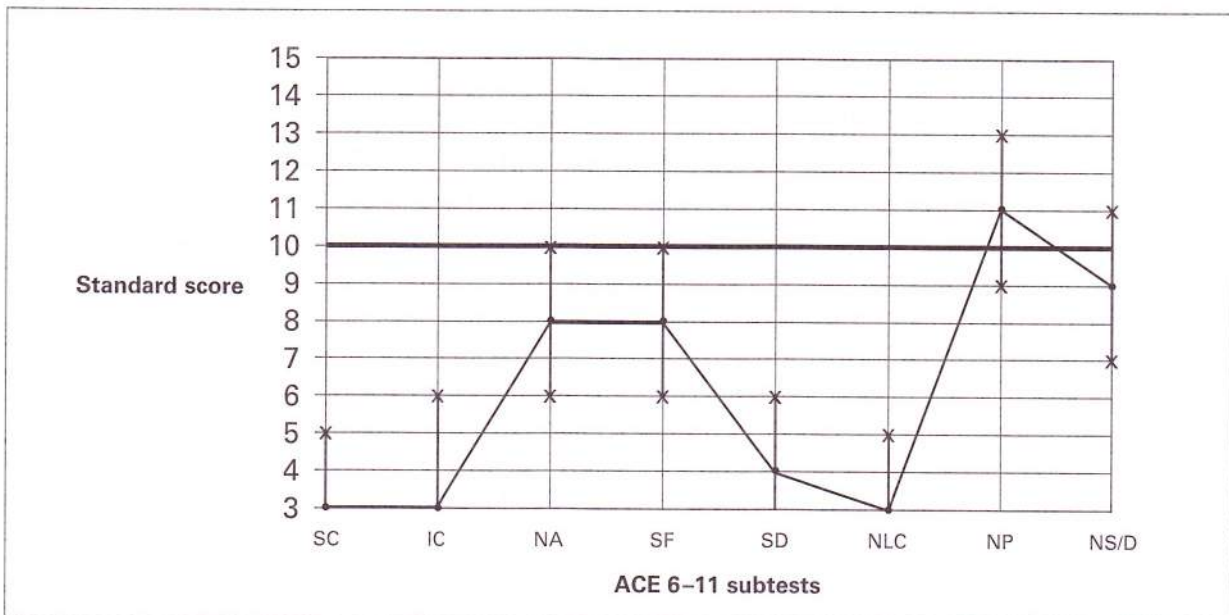


Child 3

Child 3 is male and 9 years old. He was reported to have difficulty with receptive and expressive semantic development, discourse and expressive syntax as well as problems with pragmatics. In addition he had a diagnosis of autism at an earlier age.

The ACE 6-11 profile demonstrates relative strength in Naming, Syntactic Formulation and Narrative (indicating a fluent style of expressive language) but relative weakness in all aspects of comprehension. Consideration of 80% confidence bands reveals significant differences among subtest comparisons except for the following pairs – Naming and Semantic Decisions, Syntactic Formulation and Inferential Comprehension, Syntactic Formulation and Semantic Decisions. Figure 7 shows his profile.

Figure 7: Profile of clinical sample Child 3

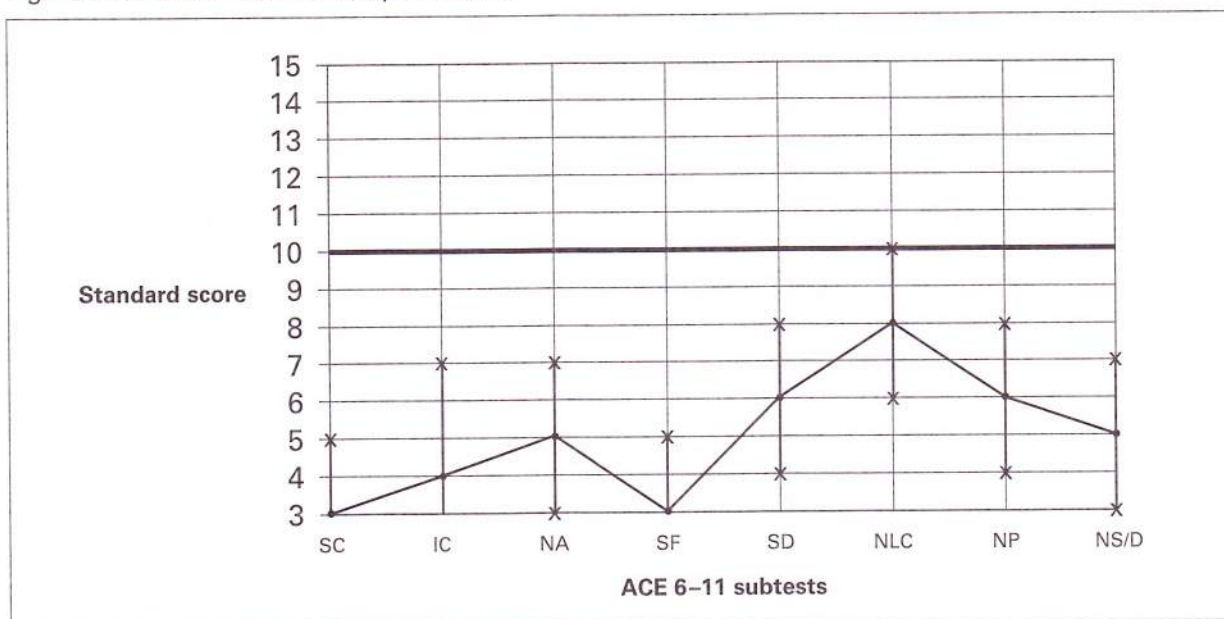


Child 4

Child 4 is female and aged 6 years 4 months. She was reported to have, in addition to a language impairment, additional learning disabilities reflected in a below average non-verbal IQ.

The ACE 6–11 profile shows very restricted language abilities across all subtests. There are statistically significant differences between her performances on Non-Literal Comprehension and Sentence Comprehension, and between Non-Literal Comprehension and Syntactic Formulation. Figure 8 shows her profile.

Figure 8: Profile of clinical sample Child 4

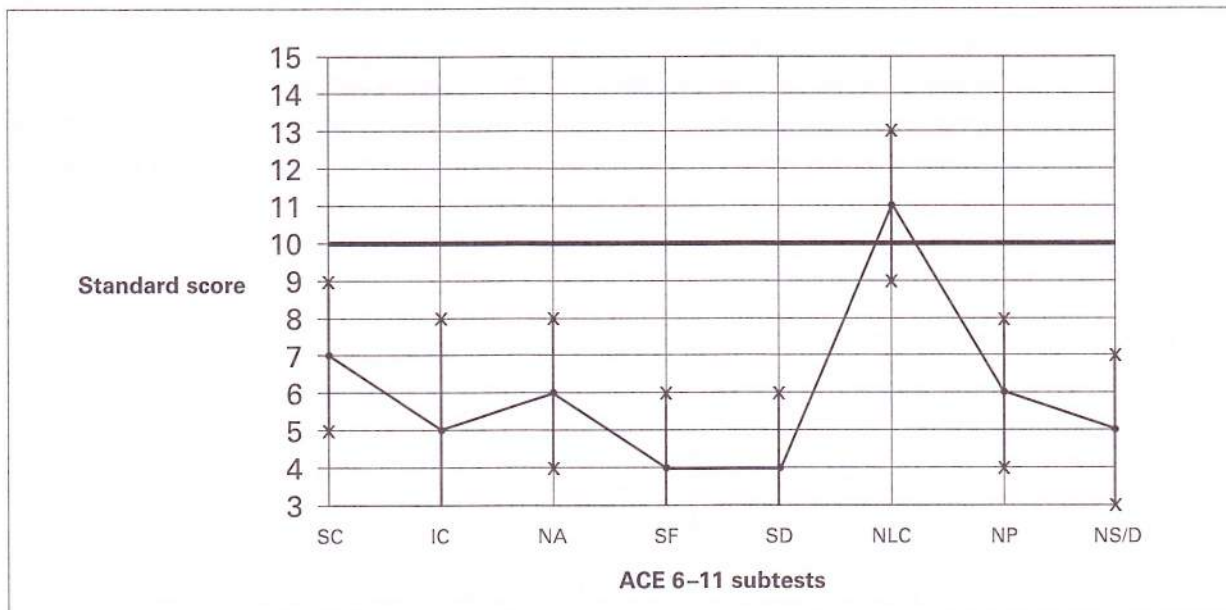


Child 5

Child 5 is male and 9 years old. He was reported to have expressive and receptive semantic problems in the absence of any additional learning problems.

The ACE 6–11 profile reveals very limited ability in Semantic Decisions, widespread restrictions on ability in subtests tapping expressive language and relative strength in Non-Literal Comprehension. There is a significant difference between his scores on the Non-Literal Comprehension subtest and the following subtests – Inferential Comprehension, Naming and Narrative Syntax/Discourse (but not between Non-Literal Comprehension and Narrative Propositions). Figure 9 shows his profile.

Figure 9: Profile of clinical sample Child 5



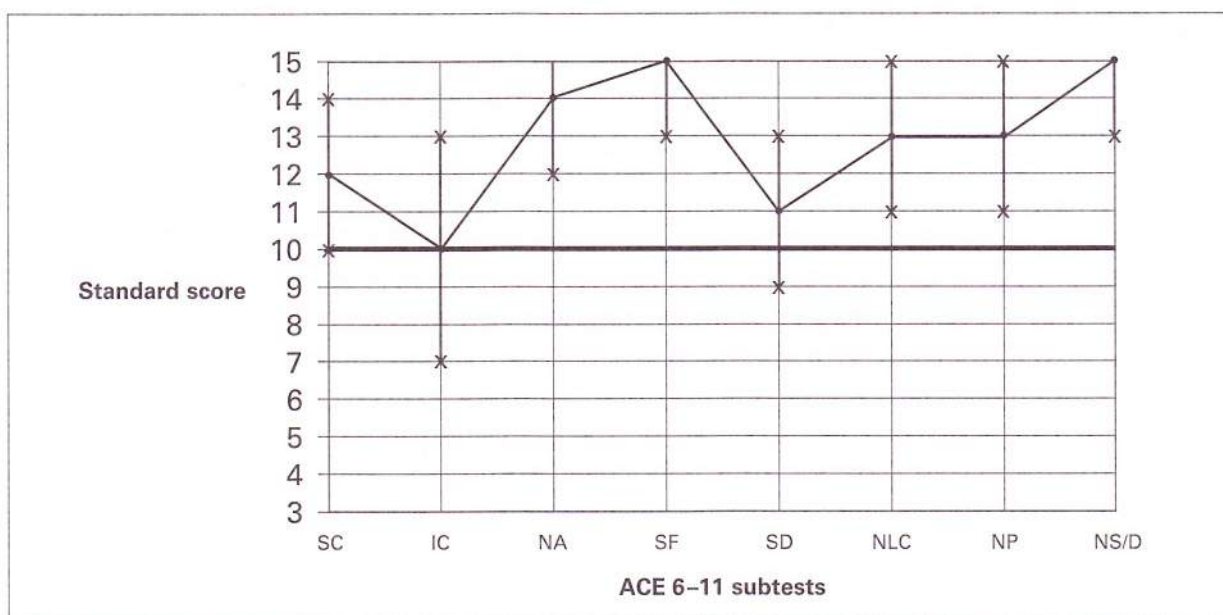
Profiles of typically developing children

The performances of individual typically developing children on ACE 6-11 were also investigated. These children show different profiles of relative strengths and weaknesses on different subtests, as do the children with SLI. While some children show a relatively 'flat' profile, others show more marked differences in performance between subtests.

Example 1

This 10-year-old child shows a consistent performance in the average to moderately high range (see Figure 10).

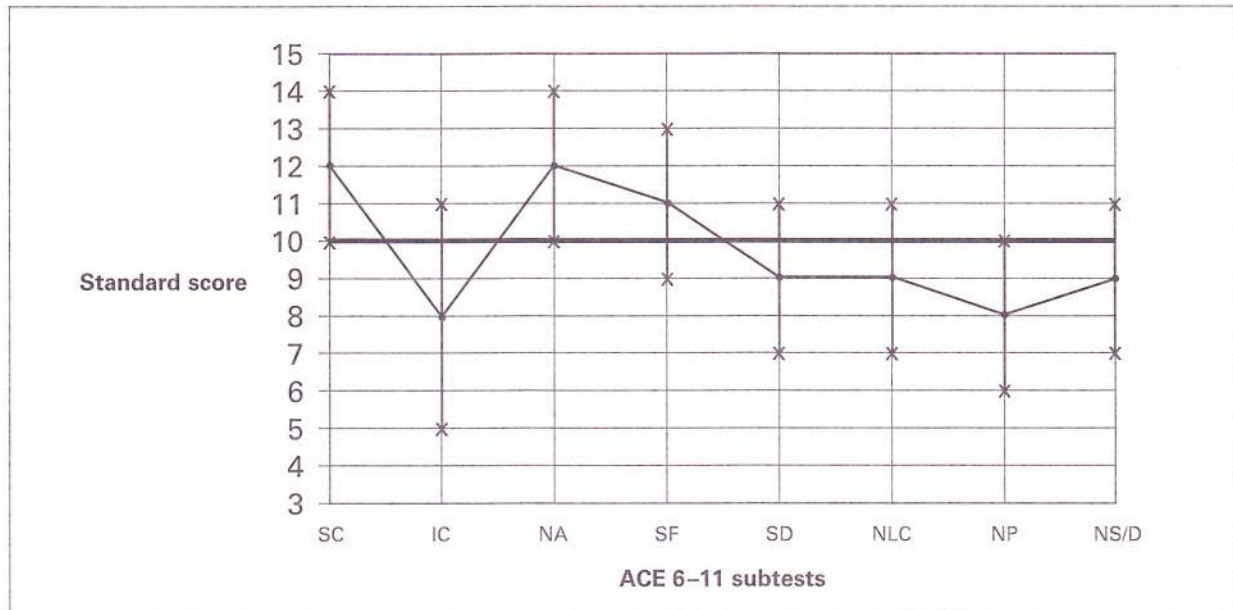
Figure 10: Profile of one typical 10-year-old child



Example 2

This 7-year-old child shows a 'spiky' profile (see Figure 11) with more marked differences between subtest scores. However, when confidence bands are plotted around the scores using the scoring tables in the Appendix, it becomes apparent that the confidence bands for all scores overlap with one another. Therefore the differences between individual subtest scores are not statistically significant. This child's ACE 6–11 Extended Test standard score is 96, giving him a percentile rank of 39.

Figure 11: Profile of one typical 7-year-old child



3.4.4 Interpretation of data from subtests

Sentence Comprehension

Below average standard scores on the Sentence Comprehension subtest may arise because of a developmental language delay or a more persistent deficit in acquiring understanding of language. The child may be having difficulty in interpreting grammatical structures or may be unfamiliar with the verbal concepts presented in this subtest. Consideration should also be given to the attention and listening and memory skills of the child. Limitations of auditory memory may underlie some, but not all, aspects of limited comprehension. Even if this is thought to be a factor, the test result will still reflect how the child performs in situations where language decoding is required. It is well recognised that many children with specific language impairments have a difficulty in acquiring some of the more abstract concepts in this task which is out of proportion to other abilities they may have.

Inferential Comprehension

Inferential Comprehension is a complex subtest since, in addition to inferencing, it involves attention to the story and visual clues, integration of information, and formulation of (at least brief) responses. Scores outside the typical average range can be interpreted as delay in comprehension at the text or discourse level. This is common in children with language disorders. However, there are some children in whom comprehension of connected text may remain specifically problematic once more fundamental deficits of sentence comprehension have been remediated.

Naming

The Naming subtest aims to identify delays of expressive vocabulary and problems of word retrieval. A very low score on this picture naming task in contrast to average or higher scores on other subtests may indicate a specific word-finding deficit. Restricted expressive vocabulary development is more likely to be accompanied by delays in other areas of language development. Both these deficits are often accompanied by word-searching behaviours or incomplete phonological forms (in the absence of overt phonological/articulatory errors). Immature errors which are typically semantically related substitutions are common in children with language delays and disorders.

Syntactic Formulation

The Syntactic Formulation subtest has been designed to elicit clause and phrase structures up to a complex level. Many children with language impairment will present with a delay or below average score on this subtest as syntactic delays are widespread in this population. Syntactic delays are often associated with phonological deficits or may appear as part of a generalised receptive-expressive language disorder. This subtest requires a degree of attention and listening in addition to formulation skills, as do most formal expressive elicitation tasks. Practice items are essential to set the pattern required from the child. It is not uncommon in typical children and in language-impaired children to express one of each pair of the structure being elicited correctly and one incorrectly. This is not a limitation of the technique but a reflection of how children perform under test conditions. However, the practitioner may wish to note the inconsistency and to carry out further probing into the structure. Morphological skills are noted only in the tester's own qualitative analysis as this subtest is designed to focus on other types of syntactic difficulty. The practitioner may wish to note patterns of syntactic or word order errors in the comments box on the Record Booklet.

Semantic Decisions

Accessing knowledge about semantics is a challenging task for any assessment. The technique used in ACE 6–11 is the Semantic Decisions subtest. Below average scores on this subtest may indicate a limited receptive vocabulary or limited knowledge about specific vocabulary items. No children in the clinical sample had difficulty understanding

the task presented to them. In order to keep the memory load within reasonable limits, four items only are read aloud. The child does not have to read the words aloud, though obviously the ability to read the words obviates the need to rehearse them in memory. Analysis of the types of errors given may indicate a specific pattern – say, choosing all phonologically related words – or a random pattern of errors with occasional successes, which may indicate guessing.

Non-Literal Comprehension

A below average score on the Non-Literal Comprehension subtest indicates a delay in this aspect of language development. It should be interpreted with caution since many children with language impairments are slow to develop non-literal understanding and a specific profile of average on all components except Non-Literal Comprehension is relatively rare but may occur in some children. It should also be noted that this subtest relies to some extent on auditory memory, especially since there is no visual support for later items.

Narrative

In order to retell the story effectively in the Narrative subtest, it is necessary for the child to integrate information across the text and infer motives of characters. The Narrative subtest, therefore, is a task which involves many aspects of language processing simultaneously. It is likely to be challenging for all children with language impairments, even for the able older child with more subtle language difficulties. A below average score on the Syntax/Discourse scale derived from the subtest may indicate a delay or impairment in expressive abilities above sentence level. This may be accompanied by relatively low scores on Syntactic Formulation, but the two are not necessarily always closely related in individuals, possibly because the two subtests make different processing demands and the child is, in some sense, more 'in charge' in the Narrative subtest. Discourse features other than those scored in the subtest can be noted in the comments section on the Record Booklet. Narrative testing may reflect more accurately than Syntactic Formulation the child's ability to participate in oral language tasks in the classroom where there are complex demands made upon reading and memory in addition to expression. Below average scores on Narrative Propositions may indicate that the child cannot recall the story accurately or has not integrated the story into a structure which can be used to assist recall.