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SALT Solutions: A Tutorial

John Heilmann¹ and Jon F. Miller²

¹ Department of Communication Sciences & Disorders, University of Wisconsin-Milwaukee,
Milwaukee, WI

² Department of Communication Sciences & Disorders, University of Wisconsin-Madison,
Madison, WI

Conflict of Interest

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Correspondence

Correspondence concerning this article should be addressed to John Heilmann, Department of Communication Sciences & Disorders, Enderis Hall 875, PO Box 413, Milwaukee, WI 53217-0413. Email: heilmanj@uwm.edu. 414-229-4625

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Abstract

Purpose: In the early 1980s, researchers and speech-language pathologists (SLPs) collaborated to develop the Systematic Analysis of Language Transcripts (SALT). Research and development over the ensuing decades has culminated into SALT Solutions, a set of tools to assist speech-language pathologists to efficiently complete language sample analysis (LSA) with their clients. In this tutorial, we describe how SALT can assist with the accurate identification of children with language disorders and provide a rich description of children’s functional language use. After summarizing the multiple elicitation methods developed by the SALT team, we provide case studies, showing how to select an elicitation method that aligns with a child’s characteristics. We then summarize major considerations when transcribing, analyzing, and interpreting language samples with SALT. We revisit our case studies to illustrate how SALT adds value to the comprehensive assessment of language in children.

Conclusion: LSA is a powerful assessment tool for children suspected of having language disorders. The SALT suite of solutions provides a toolkit to assist SLPs with their comprehensive language assessments.

40 **Background**

41 Language sample analysis (LSA) has been used to study language development and use
42 for more than 100 years. It was the main tool used by linguists to document language
43 development, usually in their own children (Brown, 1973; Piaget, 1959). Language samples
44 provided a text record of oral language use and provided insight into how children seemingly
45 acquired language so effortlessly. The process remains basically the same today but with the
46 application of computer technology to facilitate the process, providing more information per time
47 spent. The goal of this tutorial is to illustrate how the Systematic Analysis of Language
48 Transcripts (SALT) suite of tools, developed and refined over the past four decades, can add
49 meaningful value to clinical assessment protocols. This tutorial will walk you through how
50 SALT provides solutions for each step in the process: eliciting, transcribing, analyzing, and
51 interpreting language samples.

52 **What is SALT?**

53 Through decades of research and development, SALT has evolved from a simple Disk
54 Operating System (DOS) application into a multi-faceted set of language sampling resources. At
55 the heart of SALT is the specialized software that assists with the transcription and analysis of
56 language samples. The comprehensive suite of SALT solutions offers more than software to
57 assist with clinically feasible LSA, as illustrated in Table 1. The most up-to-date information on
58 the SALT suite of tools can be found on the SALT website: www.saltsoftware.com.

59 {Insert Table 1 here}

60 **How was SALT Developed?**

61 SALT has developed into this comprehensive package of tools from a guiding
62 philosophy: LSA should facilitate accurate identification of language disorders for all children

63 and generate rich descriptions showing the functional impact of the disorder, while being
64 accessible and feasible to practicing SLPs. The SALT approach aligns with best practices in
65 assessment, including Individuals with Disabilities Education Act (IDEA, 2004) requirements to
66 accurately identify disorders and document the educational impact of that disorder.

67 *Accurate Identification of Disorders*

68 In his longitudinal study, Roger Brown (1973) showed that language sample measures
69 could accurately reflect growth, replicated by Miller and Chapman's (1981) documentation of
70 cross-sectional changes in Mean Length of Utterance (MLU). These pioneering studies proved
71 that LSA can be sensitive to differences in younger and older typically developing children and
72 laid the foundation for studies showing that language sample measures can accurately identify
73 children with language disorders (Guo & Schneider, 2016; Heilmann, Miller, & Nockerts, 2010).
74 Additional research has documented the power of LSA using SALT to identify disorders in
75 speakers who are not mainstream monolingual speakers of English, including children who are
76 bilingual (e.g., Kapantzoglou et al., 2019) and children who speak African American English
77 (Oetting & McDonald, 2001).

78 *Rich Description of Functional Language Use*

79 It is not enough to simply determine whether a child has a disorder. SLPs need a rich
80 description of how a disorder impacts children's ability to meet their communication needs. For
81 SLPs working in the schools, SALT analyses assist with documenting the educational impact of
82 a communication disorder, an IDEA requirement. Because the language sample is only
83 informative if it reflects the child's meaningful communication use, we have developed and
84 refined multiple speaking tasks that represent a range of communication situations that children
85 encounter each day. To analyze performance across these speaking tasks, we have refined and

86 created dozens of measures capturing multiple dimensions of discourse (Heilmann et al., 2020;
87 Heilmann, Miller, Nockerts, et al., 2010; Heilmann & Malone, 2014). Interpretation of
88 performance requires addressing the initial clinical question: Do the SALT measures capture the
89 essence of the reported problems? If yes, then the SALT data can be used to explicate the
90 functional language deficits, suggesting approaches to interventions if necessary. The goal of
91 SALT software is to provide the range of analyses necessary to aid integrating the results into a
92 clear report of students' functional communication, consequently providing documentation of the
93 educational impact, and leading to functional treatment goals.

94 ***Clinical Feasibility***

95 A version of SALT software has been around since the 1980s, evolving with advances in
96 personal computers. SALT has further evolved with advances in our understanding of language
97 development and the difficulties children have with language and communication. Language
98 disorders, broadly cast, affect a significant number of children through their K-12 school
99 experience. The evolution of SALT has followed both the literature on typical language
100 development and research on disordered language performance to assist clinicians with capturing
101 the nuances of communication in children with disorders. To realize this goal, collaboration with
102 school-based SLPs has been integral to creating clinically feasible processes and products to
103 promote clinical use of the tool. Early advances included the creation of standardized
104 transcription routines that provided the necessary input for the software, yet were easy enough to
105 be learned quickly and not interfere with sharing the transcript with non-SLPs. Our
106 collaborations with clinicians helped to further refine elicitation methods, making them shorter
107 and more standardized to promote reliability and clinical efficiency. The partnerships further led
108 to the creation of dozens of measures documenting oral language deficits, which can be

109 calculated automatically with the software. Initially new measures sought to describe the
110 behavior of interest, followed by asking, “What do typical students of the same age/grade do
111 under the same speaking conditions?” These researcher-practitioner partnerships used case-based
112 discussions to describe the different ways disordered language performance is manifest and
113 helped refine the measures addressing each problem area. To promote interpretation of a child’s
114 performance, the SALT team has collected thousands of samples from typically developing
115 children to provide normative data, which can be used to evaluate the language of children
116 suspected of having language disorders. These normative data have been embedded into the
117 SALT software, providing automatic comparisons between the target child and their typically-
118 developing peers. Recently, clinicians helped design a report-writing feature, with full
119 paragraphs automatically generated to describe the elicitation method used, the process for
120 calculating each measures, and a summary of the most significant measures personalized for the
121 child, saving countless hours writing up the results.

122 As we proceed with this tutorial, we will illustrate how SALT can be used to collect,
123 transcribe, analyze, and interpret language samples. Upon reading this tutorial, we hope that
124 readers acquire better understanding of the rationale for the various SALT solutions, understand
125 the basic principles of using SALT, and see how LSA using SALT could fit into their clinical
126 practice. Readers interested in continuing to advance their expertise using LSA and SALT will
127 require additional practice and training that goes beyond a single Perspectives paper. We will
128 provide supplemental materials to facilitate additional practice and guide you to other free
129 materials to develop and refine LSA competence, including 30+ hours of free instruction on the
130 SALT website, most qualifying for American Speech-Language-Hearing Association
131 Professional Development Hours.

132

Elicitation

133 Eliciting a language sample is the first step in the LSA process. Talking with children is a
134 delightful experience. Their language reflects their view of the world, their thought processes,
135 and how language serves to manage their environment. Language is the basic medium for
136 interacting with others as conversations allow sharing information, asking and answering
137 questions, and sharing experiences. As children mature, language provides access to the school
138 curriculum through advancing academic vocabulary, developing stories, providing explanations,
139 and persuading others to act or change their point of view, as indexed in the Common Core State
140 Standards Initiative (National Governors Association Center for Best Practices & Council of
141 Chief State School Officers, 2010).

142 With elicitation, we seek a balance between structure (which promotes reliability and
143 consistency) and authenticity (which captures a child's functional communication use). The yin
144 of structure affords the examiner the ability to collect reliable data that can be compared to
145 normative data and promote the identification of disorders, while the yang of authenticity affords
146 the ability to capture unique information that provides a rich description of meaningful
147 communication use. SALT has developed multiple protocols covering a range of elicitation
148 tasks. These elicitation tasks were developed for monolingual English or English-fluent speakers
149 (summarized in Table 2), as well as Bilingual Spanish/English and Monolingual Spanish
150 speakers (summarized in Table 3). Full descriptions of the protocols are available in
151 Supplemental Material 1 and on the SALT website. Each elicitation protocol was developed for
152 specific research or clinical need, and each has been tested by hundreds of participants to
153 document its efficacy, reliability, and validity. Each elicitation protocol has led to the creation of

154 a database of typical speakers to establish sets of normative data and provide performance
155 expectations.

156 {Insert Tables 2 and 3 Here}

157 When considering which elicitation context to use, the examiner must consider the
158 developmental appropriateness of the task, meaningfulness of the communication context, and
159 the availability of normative data to assist with interpretation of a child’s performance. SALT
160 users should familiarize themselves with the protocols to assist in making these decisions. The
161 brief descriptions in Tables 2 and 3 (and full descriptions in the supplemental materials) can
162 provide guidance on choosing the most meaningful task for the child being evaluated. In the
163 right-most column of Tables 2 and 3, we summarized the availability of reference data by grade
164 for each respective elicitation method.

165 Each elicitation method has a detailed elicitation procedure document that provides
166 guidance on collecting the sample. The elicitation methods were originally developed for in-
167 person elicitation, but recent studies have shown that accurate and valid language samples can be
168 elicited remotely (Brennan et al., 2004; Manning et al., 2020). These elicitation protocols should
169 be used when intending to compare performance using SALT’s reference databases, making sure
170 there is an apples-to-apples comparison with the target student and the database. Some elicitation
171 methods are more fluid and require examiner-child conversational turns, yet still require
172 examiners to follow the protocol to promote reliable data collection. For example, the goal of
173 play-based and conversational samples is to motivate spontaneous language use without partner
174 interference, using open ended questions (e.g., “Tell me about some of the things you’ve been
175 doing in school lately”) and prompts to extend conversations (e.g., “Tell me more about
176 _____”). Other elicitation methods provide more detailed descriptions and prompts for the

177 children and then cue production of a monologue, with less back-and-forth discourse between the
178 child and examiner. For example, with narrative retells, the examiner reads a scripted story while
179 looking through each page of the book with the child and then asks the child to retell the story.
180 Each script ensures the child is exposed to the complete story and provides the template for
181 expected content from the child's retell version.

182 SALT's newest protocols and databases were developed for older students. The
183 expository elicitation task asks students to explain how to play their favorite game or sport and
184 the persuasion task directs children to convince someone to take action or change their
185 perspective. The protocols use graphic organizers containing the necessary components required
186 for a complete exposition and persuasion. Students are given 5 minutes to review and make
187 notes, then asked to produce their sample. The graphic organizers ensure that each student has
188 the same understanding of the expectations of the task. They also provide some confidence that
189 the expectations are clear and that the children are motivated to complete the task. Surprisingly,
190 our research has shown that the language sample measures are not impacted by the game
191 described or the persuasive topic chosen (Heilmann et al., 2020; Heilmann & Malone, 2014),
192 meaning that children can choose topics that they know and are interested in. We have found that
193 these are very motivating tasks when working with older children, who can be reticent when
194 asked, "What are your favorite things to do at school?"

195 One major area of SALT's research and development has been the development of
196 materials and methods for assessing the language of Spanish-English bilingual children. The
197 *Frog* series of wordless picture books were used in a National Institutes of Health supported
198 study of oral language and reading in Spanish – English bilingual students K – 3rd grade, ages 5 –
199 9 years. Through this funded work, the SALT team has collected over 1,000 samples from

200 bilingual speakers, available as normative data in SALT software (Heilmann et al., 2016). These
201 projects generated materials to assist with eliciting across languages. Spanish and English
202 recordings of the *Frog* stories can be downloaded to elicit the story in each language. SALT
203 users also have the option of purchasing a license for an automated online elicitation program,
204 which uses an animated avatar and recorded script to describe the task, present the story (with
205 pictures advanced automatically), and cue the child to complete a retell of the story. Heilmann et
206 al. (in press) found that measures generated by the computer-administered narrative procedure
207 were equivalent to those acquired through examiner administration.

208 Choosing an elicitation protocol requires examiners to think deeply about their case and
209 clinical questions. Clinicians may ask themselves a series of questions to assist with choosing the
210 most appropriate elicitation method, such as:

- 211 • Can the child meaningfully engage with the examiner during the speaking task?
- 212 • Is the child familiar with the elicitation context?
- 213 • Will the elicitation context be challenging enough so that you can observe potential
214 discourse breakdowns associated with a communication disorder?
- 215 • Are there normative data available to assist with interpreting the child's performance?
- 216 • Do the speaking requirements generalize to meaningful tasks in the child's day-to-day
217 life?
- 218 • Is the elicitation method representative of skills in the curriculum?

219 To illustrate how SLPs may work through these questions, we introduce three case
220 studies and discuss how clinicians may consider which elicitation method to use.

221 **Lee**

222 Lee is a three-year-old child whose preschool teacher has expressed concerns about his
223 lack of engagement with the other children in class. She wondered if Lee’s hearing was intact,
224 but parents report that his hearing was tested and is fine. Lee’s teacher notices that he will talk
225 with her, but not in front of the other children. Lee’s parents’ primary concern is that he “sounds
226 young” when compared to other kids his age. When considering elicitation methods, the SLP
227 quickly rules out narrative retells, expository, and persuasive contexts, as these elicitation
228 methods are well above Lee’s developmental level. Based on the teacher report, 1:1
229 communication with adults appears to be a relative strength. Because Lee does have a less
230 outgoing temperament, it appears that play-based sample aligns with his developmental level.
231 Furthermore, Lee’s classroom is center-based and play is central to most classroom activities,
232 making play-based discourse highly aligned with the classroom curriculum.

233 **Laura**

234 Laura is in first grade. Spanish is her native language, and she has been in a Spanish-
235 English bilingual program since she was in kindergarten. Laura’s teacher is concerned about her
236 ability to follow directions. Given the large amount of bilingual normative data for narrative
237 retells, the SLP considers collecting a narrative retell. Consultation with parents and teachers
238 confirms that conversations with adults and peers is a relative strength. The SLP worries that a
239 conversational sample would not reveal the nature of the Laura’s difficulties. Furthermore,
240 narrative language is pervasive in the curriculum, confirming the choice of collecting a narrative
241 retell. Looking across the stories used in the SALT narrative retell protocols, the SLP chooses to
242 use the story, *Frog, Where are You?* because of the availability of normative data. As observed
243 in Table 3, normative data are available for this story from Spanish-English bilingual children in
244 Kindergarten through grade three.

245 David

246 David is a 16-year-old sophomore in high school. He receives SLP and other special
247 education services for his multiple needs. David has an intellectual disability and spends part of
248 his day in a resource room. David's SLP frequently collects persuasive and expository samples
249 with his adolescent students, which he likes because these tasks are part of the curriculum,
250 engage students, and challenge speakers. David's instructional team, however, has chosen a
251 unified effort to advance his reading skills, leading his SLP to consider a narrative retell. When
252 considering which story to use in the retell, the SLP selects *Frog, Where are You?* The SLP
253 chose this story because there are normative data for children in preschool through 1st grade (see
254 Table 2) and David's team estimates that he is reading at an early elementary level. The SLP
255 believes that the narrative sample will provide unique insight into his literate language skills and
256 add value to the team's effort to support David's advancing literacy. The SLP can compare
257 results over time to document intervention progress, with time-one to time-two comparisons built
258 into SALT software. Furthermore, the narrative elicitation protocol can elucidate specific
259 language features of concern which do not conform to any of the database protocols but match
260 specific student abilities and goals.

261 Transcription

262 A written transcript of the child's language sample is the nucleus of clinical LSA. The
263 transcript provides a written record of a single communication incident and is the basis of all
264 subsequent analyses. The transcript provides a permanent record of oral language use under
265 specific elicitation conditions and serves many purposes. It provides the raw data for dozens of
266 measures automatically generated by SALT software. The SALT transcript itself is readable by
267 parents, teachers, and other professionals, serving as an important part of the student record and

268 facilitating communication among family and staff. The process of creating and reviewing the
269 transcript can be an enlightening experience, providing deep insight into the essence of a child's
270 language skills (Schuele, 2010). Yet, transcription remains the major barrier to the LSA process.
271 Many SALT users have learned to transcribe, arguing that they gain detailed knowledge of the
272 student through the process of writing down exactly what is said. Alternatively, school districts
273 and clinics have set up transcription labs or have outsourced transcription to third party
274 transcribers, such as SALT Transcription Services. Assistance with transcription allows SLPs to
275 efficiently focus on analysis and interpretation of the results. Speech-to-text software
276 development continues to improve but is based on standard English and eliminates many of the
277 features of interest, such as false starts, repetitions, revisions of words and sentences, and errors
278 at the word or utterance level. And importantly, most speech-to-text solutions have problems
279 with utterance segmentation, as they are using pauses to define an utterance. Despite the promise
280 of automated transcription, we believe that the current technology does not substantially decrease
281 the time required to obtain a written transcript of children's discourse. In our labs, we have found
282 that editing a file that has been electronically transcribed takes as much time to edit as hand-
283 transcribing the sample in the first place.

284 A summary of the SALT transcription conventions is provided in Table 4, where we list
285 each feature, provide a brief description, provide examples, and describe why this convention is
286 important. It is essential that whoever transcribes the language sample adheres to the
287 transcription conventions developed by SALT. These conventions allow SALT software to
288 accurately analyze the child's language features and, ultimately, proper interpretation of the
289 child's performance. Additional detailed descriptions and resource sheets are available in
290 Supplemental Material 2 and the SALT website (including standard conventions for English,

291 conventions adopted for Spanish, French, written language, C-unit segmentation rules, errors,
292 fluency, and nonmainstream forms). For those looking for guided instruction, the SALT website
293 has free transcription training videos.

294 {Insert Table 4 Here}

295 SALT software offers a specialized editor for creating transcribed text files. The editor
296 creates a header box aiding entry of background information needed for the identification of the
297 child, elicitation protocol, age, grade in school, start and stop time to measure elapsed time, and
298 reminders of missing information. The editor also checks for errors in terminal punctuation, and
299 words, morphemes, or codes not following the standard SALT conventions. The SALT editor
300 also has tools to assist with Spanish transcription. The SALT team found that transcription of
301 Spanish language samples required deep knowledge of the language to identify the appropriate
302 root word, given the extensive inflections present in the Spanish language. SALT includes a
303 Spanish dictionary used to identify word roots (e.g., *estaba|estar, corriendo|correr*), making
304 measures such as mean length of utterance in words (MLUw) and number of different words
305 (NDW) comparable across languages (Rojas & Iglesias, 2006). Once the file is error free, it is
306 available for analysis by itself or for comparison with the relevant database. The file is saved as a
307 simple text file with the extension, “.slt,” which can be opened with SALT software and
308 analyzed using the embedded menus.

309 **Analysis**

310 When SLPs open their transcripts in SALT software, they see a menu bar at the top of the
311 program. Some of the menu items are ubiquitous with modern word processing software (e.g.,
312 File, Edit, Help), while others are unique to SALT (e.g., Analyze, Explore, Link). These menus
313 open the door to exploring different aspects of the language sample. Computers excel at counting

314 and calculating error free scores. SALT calculates more than 50 measures for individual
315 transcripts, with the major measures used with SALT summarized in Table 5, with an exhaustive
316 list provided in Supplemental Material 3. Analyses in SALT are generated automatically, with
317 summaries available describing children’s general performance (e.g., Standard Measure Report)
318 in addition to deep-dive analyses into various language features (e.g., summaries of utterance
319 types and lengths, detailed analyses of errors and omissions, analysis of maze components).

320 {Insert Table 5 Here}

321 **Interpretation**

322 The rich data that SALT provides is only useful if it is accurately interpreted. Examiners
323 must understand not only the nature of the various SALT measures, but also how SALT analyses
324 fit within a comprehensive assessment. The SALT language sample data complement other
325 assessment data, such as norm-referenced tests, by assessing children’s functional language use.
326 As we stated at the outset of this tutorial, one of the guiding philosophies in developing and
327 refining SALT has been to empower clinicians to accurately identify disorders and provide a rich
328 description of a child’s functional language skills. SLPs must collect a rich pool of assessment
329 data and use a converging evidence framework for making diagnostic decisions, which includes
330 describing the impact of a disorder and creating functional, educationally relevant IEPs (Castilla-
331 Earls et al., 2020). SALT analyses add value to the comprehensive assessment because they
332 capture a unique dimension of language. Language sample data generally do not have strong
333 correlations with norm-referenced measures (Heilmann et al., 2020; Ukrainetz & Blomquist,
334 2002), meaning that SALT data are documenting something beyond norm-referenced scores.
335 Within the SALT analyses, additional dimensions of oral language can be evaluated, including

336 lexical skills, syntactic skills, organization skills, and discourse difficulties (Heilmann & Malone,
337 2014; Westerveld & Gillon, 2010).

338 SALT provides transcript analyses and summaries of multiple measures in seconds. Some
339 data are easy to interpret on their own. For example, if 60% of an eight-year-old child's words
340 produced are reduplications and reformulations (i.e., mazes), she is obviously having difficulty
341 communicating clearly. If a three-year-old has an MLU of 6.5, there is a low probability that she
342 has a language disorder. Interpretation without normative data, however, is often difficult for
343 clinicians, who would need to remind themselves of milestones for dozens of measures, across
344 multiple contexts, and throughout the lifespan. To improve the feasibility of interpreting
345 language sample data, the SALT team has compiled multiple databases acquired from typically
346 developing speakers and embedded these data into SALT for ease of interpretation. After
347 transcribing a sample, comparison sets are selected from the SALT databases, consisting of
348 6,000+ transcripts across ages 3 – 19, grades preK – 12. The comparative set is individually
349 selected to match the target child's elicitation task, their age/grade, and sample length. This
350 process provides the closest possible match to typical performance and aids in interpreting an
351 individual child's performance. SALT is unique in providing dynamic norms for language
352 sample measures (Tucci et al., 2022).

353 Consistent with SALT's goal of clinical feasibility, SALT software incorporates tools to
354 streamline the reporting process. The summary and comparison data are provided in sets of
355 tables, which can be copied into a report aiding overall interpretation (examples provided in the
356 appendices). SALT also provides a text-based report, the Performance Report, which provides
357 paragraph descriptions of each SALT elicitation procedure and individual measures including the
358 target child's scores compared with the database comparison samples. The time spent eliciting

359 and transcribing the sample is more than made up with the Performance Report which can be
360 edited, then copied and pasted into a final document. A sample of Lee's Performance Report is
361 provided in Supplemental Material 4.

362 To illustrate how the SALT data can be interpreted within the comprehensive assessment,
363 we will provide examples of how the data can be used to help identify the presence of disorders
364 and document the impact of the disorder. We will revisit the three children introduced above:
365 Lee, a three-year-old child with a language delay, Laura, a first-grade student who is Spanish-
366 English bilingual, and David, a sophomore with intellectual disability. We will first describe how
367 measures can be used to identify disorders within the comprehensive assessment and then
368 illustrate how additional measures can be used to provide a rich description of the impact of the
369 communication disorder.

370 **Using LSA to Identify Disorders**

371 Many clinical assessments in speech-language pathology result in a high-stakes clinical
372 decision, determining whether a child has a delay or disorder. Language sample measures,
373 coupled with other assessment data, are a powerful combination for accurately making these
374 decisions. Key measures documenting development include mean length of utterance (MLU),
375 number of different words (NDW), omissions of words and morphemes, and grammatical and
376 syntactic errors. A low score on these SALT measures, coupled with similar patterns from other
377 developmental measures, can indicate a developmental delay.

378 ***Identifying Lee's Language Difficulties: Birth – 3 Eligibility***

379 When Lee was two years old, his early intervention team administered the McArthur –
380 Bates Communication Development Inventory: Words and Sentences (MBCDI; Fenson et al.,
381 2015). The MBCDI provided his parents with a list of over 300 words and asked them to identify

382 the words that they have heard their child produce (along with other ratings to estimate language
383 skills). The MBCDI is quick and easy to administer and has excellent sensitivity and specificity
384 in identifying young children with language delays (Heilmann et al., 2005). Lee's parents
385 reported that he produced 12 words on the MBCDI, putting him below the 5th percentile in
386 language production. During his play-based language sample, Lee was quick to warm up with
387 the examiner and communicated frequently. His MLU, total words, and different words were all
388 quite low. He frequently used vocalizations and gestures to make requests and comments. Much
389 of his speech was unintelligible, with occasional single words used during the sample. The
390 results of the MBCDI, play-based language sample, and other observations and reports
391 converged and led the team to a diagnosis of language delay. The frequent intentional
392 communication observed during the play-based session allayed concerns about a more pervasive
393 communication disorder. Lee was enrolled in early intervention and then transitioned to a
394 preschool program.

395 ***Identifying Lee's Language Difficulties: Preschool Eligibility***

396 When Lee transitioned out of birth – 3 and into preschool, he initially did not receive
397 services from the school's SLP. While in preschool, Lee's teacher noticed that he did not engage
398 with his peers but enjoyed interacting with the adults in the classroom. Lee's parents noticed
399 rapid growth in his language skills, but still worry that he sounds younger than his peers. The
400 preschool special education team completed a comprehensive evaluation, which included a
401 speech and language assessment by the SLP. Lee's SLP collected a play-based language sample,
402 as well as the Rice-Wexler Test of Early Grammatical Impairment (TEGI; Rice & Wexler,
403 2001). The TEGI is a quick probe of grammar skills that has excellent sensitivity and specificity
404 for preschoolers and children in early elementary school (Ash & Redmond, 2014). Lee scored in

405 the 5th percentile on the TEGI. His play-based sample was compared to 30 samples from the
406 SALT play-based reference database (see Appendix A for a summary of his language sample
407 data, which includes annotations describing the data reported in this case study). He did produce
408 many multi-word combinations, but his overall MLU in morphemes was 1.67. The database
409 average for MLU from his age-matched peers was 3.43 (SD = 0.66), showing that his MLU is
410 2.68 standard deviations below the mean. In his 5-minute sample, he omitted 10 words and
411 morphemes, whereas his peers, on average, omitted 1.93 words and morphemes, which was 3.67
412 standard deviations below the mean. The TEGI and SALT data, coupled with additional
413 observations and caregiver feedback, converge to help the team conclude that Lee continues to
414 be well behind his peers in his overall language development. He continues to show signs of a
415 language delay and is at risk for continued language disorder. The team confirms that he is
416 eligible to receive services through his school district. The team uses additional SALT data,
417 together with their observations and stakeholder input, to describe the nature of Lee's language
418 difficulties and create a functional, educationally relevant Individualized Education Program
419 (IEP).

420 **Using SALT to Describe the Nature of Disorders and Identify Functional Intervention**

421 **Targets**

422 LSA provides a unique window into children's language use. In our example with Lee,
423 we saw that he omits morphemes in both structured, decontextualized tasks and in spontaneous
424 language use, confirming a high likelihood of true language delay. Observing Lee's restricted
425 language skills within the spontaneous language sampling context highlights the types of
426 difficulties he has in his day-to-day communication. SALT analyses allow the clinician to further
427 examine the overall characteristics of Lee's discourse to recognize additional features that

428 require support and to identify relative strengths to build from. For example, our review of Lee's
429 SALT data in Appendix A showed that Lee had good intelligibility (% Intelligible Utterances; %
430 Intelligible Words), few reduplications and reformulations (Maze Words as % of Total Words),
431 and had few big gaps in his sample, as indicated by few pauses (Pauses Within Utterances,
432 Pauses Between Utterances, and Pause Time as % of Total Time). On the other hand, we also
433 observed that, in addition to a low MLU and frequent omissions, Lee had considerably weaker
434 lexical diversity skills when compared to his peers – Number of Different Words, Type Token
435 Ratio, and Moving-Average Type Token Ratio were each more than three standard deviations
436 below the mean. This brief summary starts to paint a picture of Lee – a student who has interest
437 in communicating with some members of the classroom and, overall, intact discourse skills.
438 Lee's primary areas of difficulty are with the lexical, grammatical, and syntactic aspects of
439 language. This rich picture can lead to more appropriate and individualized supports for Lee.

440 SALT was developed to assist with these rich descriptions by providing multiple
441 measures that reflect strengths and areas of growth in discourse. In the subsequent sections of
442 this tutorial, we discuss some common aspects of oral language that can be impacted in subsets
443 of children with communication disorders, highlighting the types of difficulties observed in
444 children and the SALT measures that help uncover them.

445 ***Describing Laura's Language Use: Word Finding and Utterance Formulation Problems***

446 Students with utterance formulation difficulties frequently repeat and revise words or
447 phrases. These behaviors were termed "mazes" by Walter Loban in his classic book documenting
448 oral language growth in typical K – 12 children (Loban, 1976). Many children with language
449 disorders produce a high percentage of their words within mazes, which interferes with overall
450 communication effectiveness (Thordardottir & Ellis Weismer, 2002). In addition, Guo et al.

451 (2008) demonstrated that children with language disorders tend to have more frequent pauses
452 and speech disruptions than their typically developing peers and proposed that these disruptions
453 were caused by the lexical and syntactic difficulties observed in children with disorders Analysis
454 of children's mazes, pauses, and speaking rate have long been a part of comprehensive SALT
455 analyses. When transcribing using standard SALT conventions, all words produced as mazes are
456 placed within parentheses. This coding allows SALT to provide a detailed summary of a child's
457 mazing behavior. Standard SALT transcription conventions also require that transcribers add the
458 elapsed time for substantial within- and between-utterance pauses, which allows SALT to
459 automatically calculate the frequency and duration of a child's pauses.

460 When evaluating mazes and pauses, examiners require guidance on interpreting the
461 significance of the maze and pause behavior. We all know individuals who use mazes and pauses
462 when speaking. Some individuals with disorders use mazes and pauses frequently, and some do
463 not. Many children and adults without disorders use mazes and pauses, which would not be
464 considered pathological. It is a matter of extremes – whereas all speakers will pause, revise, and
465 repeat when speaking, a limited number of speakers will show these behaviors at a high level
466 that interferes with communicating the intended message. Those individuals with a
467 communication disorder who also have word finding and formulation problems will have
468 significant difficulty expressing themselves.

469 We return to our case of Laura, the first-grade student suspected of having a language
470 disorder. Laura's team completed a comprehensive evaluation in both English and Spanish,
471 finding that she indeed had a language disorder. She completed a retell of the narrative, *Frog,*
472 *Where are You?* in Spanish, her dominant language. Her SLP observed that Laura's MLU in
473 words and overall story organization skills were significantly lower than her peers. Further

474 analysis of her language sample revealed significant difficulty with utterance formulation skills,
475 which we will focus on in this tutorial (see *Maze* and *Rate & Pause* summaries Appendix B). In
476 her narrative retell, Laura had a value of 38.5% for the “Maze Words as % of Total Words”
477 measure, which showed that 38.5 percent of the words she produced were mazes. In addition, she
478 had a value of 75.0% for “Utts with Mazes as % of Total Utts,” which showed that 3/4 of all her
479 utterances contained at least one maze. Upon comparing her sample to 117 samples from the
480 SALT database, we see that she was 3.40 standard deviations from her peers when examining the
481 percentage of her words that were in mazes and 2.20 standard deviations from her peers for the
482 number of utterances that contained mazes. Looking at the Rate and Pause Summary, we see that
483 Laura’s speaking rate is a bit low, with words per minute less than one standard deviation below
484 her peers (-0.86) and utterances per minute 1.44 standard deviations below her peers. We further
485 note that her pauses are equivalent to her peers. Collectively, we see that Laura is having
486 significant difficulty with the narrative task. In addition to producing a simple story and having a
487 low MLU, she is using mazes at a high level. While some children with language disorders have
488 simple grammar and vocabulary, they still produce their stories fluently and with few repetitions
489 and revisions. Laura’s mazing is undoubtedly compounding her other language issues. The
490 language sample data, in particular the maze data, helps to characterize the difficulties she is
491 having and leads the team to an individualized plan to meet her needs.

492 ***Describing David’s Language Use: Discourse Organization Difficulties***

493 Language samples provide the opportunity to carefully assess children’s social use of
494 language. Some problems arise in the relationship between utterances. For example, in
495 conversation it is important to maintain the topic, take turns, and relate new to old information.

496 When telling stories, it is important to ensure that the listener understands the characters, setting,
497 and plotline. A language sample can provide insight into these discourse patterns.

498 Children with language disorders frequently have difficulty across language contexts,
499 such as narrative organization skills (Govindarajan & Paradis, 2019). Documenting these
500 problems has led to the creation of objective scoring routines that have proven to yield valid and
501 reliable results. The Narrative Scoring Scheme (NSS) consists of the eight essential narrative
502 categories: introduction, character development, mental states, referencing, conflict resolution,
503 cohesion, and conclusion (Heilmann, Miller, Nockerts, et al., 2010). Each category is scored
504 from 0-5 for a total of 40 points. To facilitate the scoring process, SALT adds a scoring box to
505 the end of the transcript so users only need to enter their score for each category. Note that all of
506 the SALT narrative retell databases have been scored for the NSS so they are available for
507 immediate comparison. The success of the NSS spawned the creation of rubrics to document
508 organization for children's expository skills (Heilmann & Malone, 2014) and persuasive skills
509 (Heilmann et al., 2020). Copies of the scoring rubrics are available in Supplemental Material 5.
510 Further self-paced training and practice activities for the rubrics are available on the SALT
511 website.

512 With David, the examiner collected a narrative retell of *Frog, Where are You?* Because
513 David has an intellectual disability and has been receiving comprehensive special education
514 supports for much of his life (including SLP services), a differential diagnosis was not the
515 primary clinical goal. Rather, the SLP wanted to gather data that would add value to the team's
516 current push to advance David's literacy skills. For our purposes, we will focus on David's
517 narrative organization skills as measured by the NSS (results in Appendix C). As noted above,
518 there are no SALT databases of narrative retells with age-matched peers. Because David's team

519 judged his reading skills to at an early elementary level, we compared David's retell to a
520 database of first grade students. We observed that David's greatest strength was with the
521 Referencing category – he scored a 3 on this NSS category, which was only 0.30 standard
522 deviations below children at his academic level. All other aspects of his storytelling were
523 significantly impacted, including some of the earliest developing narrative features. For example,
524 David scored a 1 on the Introduction, which was 1.88 standard deviations below the database.
525 His overall composite NSS score was 2.61 standard deviations below the first-grade children in
526 the SALT database, showing that his narrative organization skills were markedly impaired. It
527 appears that David's literacy team need not only focus on his decoding skills, but also the literate
528 language skills necessary for him to advance his overall literacy.

529 **Final Thoughts**

530 SALT includes a vast array of measures that precisely document the range of oral
531 language deficits SLPs are asked to manage. The categories discussed above are not exhaustive,
532 nor are they mutually exclusive. Rather, they are an overview of the range of analyses that SALT
533 can help clinicians capture within their comprehensive assessments. No single tutorial can
534 provide all that is needed to gain full competence in a clinical method. We hope that the
535 information provided gave an appreciation for how SALT can help to identify disorders and
536 provide rich descriptions of functional communication. Those who are interested in increasing or
537 expanding their use of LSA with SALT can extend their language sampling skills by reviewing
538 the contents in the supplemental materials and completing the free training on the SALT website.
539 We realize that jumping into language sample analysis using SALT can seem daunting. We
540 encourage those new to the process to start small. One step is to use the elicitation materials and
541 rubrics in the supplemental materials to try out language sampling with current clients. A good

542 place to start is with our narrative retell, expository, or persuasion elicitation tasks, as they are
543 highly standardized and can be completed in less than 15 minutes, on average. If you are not
544 ready for full transcription, you could record a sample and try your hand at coding
545 macrostructure using one of our rubrics. The coding materials are freely available (in the
546 supplemental materials and on the SALT website), and training can be completed in several
547 hours. Those ready to advance their language sampling prowess can start learning the
548 transcription process. To take full advantage of the tools available, we recommend purchasing
549 SALT software and completing the self-paced modules on the SALT website. We find that
550 roughly 10 hours of training is sufficient for those new to language sample analysis, with less
551 time required for those who have some experience with transcription. Again, we recommend
552 starting small – maybe try a short narrative retell from a child on your caseload. As you increase
553 your experience and expertise with language sampling, we encourage you to take advantage of
554 the many training resources and find like-minded clinicians to share the journey.

555 As stated at the beginning of this paper, all SALT tools have been created with a clinical
556 audience in mind. The tools were developed by clinicians, for clinicians. In this tutorial, we
557 described some of the features that can help identify profiles of strengths and weaknesses in
558 children. The program also brings a host of exploratory options to examine specific morphemes,
559 words, or utterances in detail. The entire LSA process brings into focus the challenges faced by
560 individual children. Rather than fitting the child to the test, the language sample is the child's
561 own words and utterances, and reflects the way *they* have a conversation, tell a story, describe
562 processes, and attempt to persuade others. SALT provides many data tables, with both individual
563 numbers and measures compared with age- or grade-matched peers. These quantitative data
564 allow clinicians to form a picture of an individual's strengths and weaknesses.

565 SALT Software, LLC is committed to the advancement of LSA, using its resources to
566 collect additional database samples, provide support for clinicians completing LSA, and update
567 the software to stay current with changes in hardware. In addition, assistance is always an email
568 or phone call away. In our conversations with the current leadership of SALT Software, LLC, we
569 have learned that they continue their commitment to research and development of the SALT
570 suite of tools. One priority is to expand the elicitation methods and associated normative
571 databases, providing clinicians with additional tools for describing the functional language skills
572 of the children they serve. The SALT team is also committed to expanding the evidence base for
573 using SALT to accurately identify and describe the language of children who are bilingual and
574 those who speak nonmainstream dialects. A final priority is to continue to increase the feasibility
575 of using SALT so that more SLPs can regularly incorporate this powerful tool into their clinical
576 assessments.

577 We are thankful for the opportunity to share our passion with the audience of
578 Perspectives and for the editorial team to commit a special issue on LSA. SALT is but one
579 method of completing LSA. We shared our perspective on LSA and what SALT can offer, but
580 encourage readers to investigate other options with language sampling. There are subtle
581 differences, but at the end of the day we all have the same goal: Empowering SLPs to use
582 evidence-based tools to assess children's functional communication.

583

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- 687 **Appendix & Supplemental Material Captions**
- 688 **Appendix A** *Standard Measures Report Generated from Lee’s Language Sample*
- 689 **Appendix B** *Maze and Rate & Pause Summaries Generated from Laura’s Language Sample*
- 690 **Appendix C** *Narrative Scoring Scheme Summary Generated from David’s Language Sample*
- 691 **Supplemental Material 1** *SALT Elicitation Protocols*
- 692 **Supplemental Material 2** *SALT Transcription Resources*
- 693 **Supplemental Material 3** *Description of SALT Coding Conventions*
- 694 **Supplemental Material 4** *Lee’s Performance Report*
- 695 **Supplemental Material 5** *SALT Macrostructure Rubrics*

Table 1*Description of the SALT Suite of Tools*

Tool	Description
SALT Software	PC- and Mac-based software that performs automated analyses of language transcripts and compares individual student's performance to databases of typically developing peers. Also used to analyze a large number of samples in research studies. Can be purchased for individual use or as a site license.
SALT Website	A <i>one-stop-shop</i> for language sampling resources, including information on the software, free training videos, free downloads of elicitation protocols, and additional resources to assist with LSA.
SALT Textbook	A bounded, traditional textbook that summarizes elicitation, transcription, and analysis using a case-based approach.
SALT Elicitation Protocols	A set of standardized protocols to assist clinicians with collecting language samples in a regular, yet naturalistic manner. Available on the SALT website and in Supplemental Material 1.
SALT Transcription Conventions	Transcription rules designed to promote consistency in transcription, accommodate the inevitable irregularities in children's natural speech production, and afford automated analysis of dozens of language features.
SALT Transcription Services	A fee-based transcription service where SLPs can upload recorded samples to the cloud, which are transcribed by professional transcribers and checked for accuracy.
SALT Databases	Through decades of research and development, each elicitation protocol has databases to use as normative data for clinical evaluations. Databases are embedded into the SALT software and are also available through peer-reviewed publications.
SALT Software, LLC	The company responsible for maintaining the SALT website, updating software, providing customer support, and research and development of new language sample resources.

Table 2*Summary of SALT Elicitation Methods for Monolingual English Speakers*

Elicitation Method	Description	Ages with Normative Data	Grades with Normative Data
Play	Examiner engages in play with the target speaker using age-appropriate toys such as a play farm or garage.	2;8 – 5;8	P, K
Conversation	Examiner engages the target speaker in a conversation where specific topics are introduced including at least one topic absent in time and space.	2;9 – 13;3	P, K, 1, 2, 3, 5, 7
Narrative – Student Selected Story (SSS)	Target speaker produces a narrative based on a story of their choosing. No pictures, books, or other props are used.	5;2 – 13;3	K, 1, 2, 3, 5, 7
Narrative – Story Retell	Target speaker produces a narrative based on a specific story. The examiner and speaker review the book together. Then the speaker retells the story while looking at the pictures (text is covered).	3;6 – 12;8	P, K, 1, 2, 3, 4, 5, 6
<i>Retell Story Options</i>	<i>Frog, Where are You?</i> <i>Pookins Gets Her Way</i> <i>A Porcupine Named Fluffy</i> <i>Doctor De Soto</i>	<i>3;6 – 7;5</i> <i>7;0 – 8;11</i> <i>7;11 – 9;11</i> <i>9;3 – 12;8</i>	<i>P, K, 1</i> <i>2</i> <i>3</i> <i>4, 5, 6</i>
Expository	Target speaker explains how to play a favorite game or sport. The speaker is given a few minutes to fill out a planning sheet consisting of the relevant points of an expository. Then the speaker explains how to play the game or sport using the planning sheet.	10;7 – 18;9	5 – 7, 9 – 12
Persuasion	Target speaker provides a persuasive argument. The speaker is given a few minutes to select an issue from the list of suggested issues or one of their own choosing, and to complete a planning sheet consisting of the relevant points of a persuasive argument. Then the speaker narrates their persuasive argument using the planning sheet.	12;10 – 18;9	9 – 12

Note: Row labeled Retell Story Options (in italics) provides additional detail for the stories used in the SALT retell protocols

Table 3*Summary of Elicitation Methods for Bilingual Spanish/English and Monolingual Spanish Speakers*

Elicitation Method	Description	Ages with Normative Data	Grades with Normative Data
Bilingual Spanish/English Story Retell	Target speaker produces a narrative based on a wordless picture book. Examiner and speaker review the book together using the target language (Spanish or English). Then the speaker retells the same story, in the target language, while looking at the pictures. All instructions and prompts are given in the target language.	5;0 – 9;9	K, 1, 2, 3
<i>Retell Story Options</i>	<i>Frog, Where are You?</i> <i>Frog Goes to Dinner</i> <i>Frog on His Own</i>	<i>5;0 – 9;9</i> <i>5;5 – 8;11</i> <i>6;0 – 7;9</i>	<i>K, 1, 2, 3</i> <i>K, 2</i> <i>1</i>
Bilingual Spanish/English Unique Story	Target speaker produces a unique narrative (not a retell) using a wordless picture book. The examiner does not model the story. The speaker looks through the book and then, using the target language (Spanish or English), tells the story. All instructions and prompts are given in the target language.	5;0 – 9;7	K, 1, 2, 3
<i>Unique Story Option</i>	<i>One Frog Too Many</i>	<i>5;0 – 9;7</i>	<i>K, 1, 2, 3</i>
Monolingual Spanish Story Retell	Target speaker produces a narrative based on a wordless picture book. Examiner and speaker review the book together. Then the speaker retells the story while looking at the pictures. All instructions and prompts are given in Spanish.	5;10 – 10;7	1, 2, 3
<i>Retell Story Options</i>	<i>Frog, Where are You?</i> <i>Frog Goes to Dinner</i> <i>Frog on His Own</i> <i>One Frog Too Many</i>	<i>5;10 – 9;11</i> <i>6;4 – 10;6</i> <i>6;1 – 10;1</i> <i>6;9 – 10;7</i>	<i>1, 2, 3</i> <i>1, 2, 3</i> <i>1, 2, 3</i> <i>1, 2, 3</i>

Note: Rows describing story options (in italics) provide additional detail for the stories used in the SALT retell protocols

Table 4*Summary of SALT Transcription Conventions*

Feature	Description	Examples (<i>Explanation in italics</i>)	Importance
Utterance segmentation	Follows c-unit rules to segment independent clauses.	C I got cheese and he got pepperoni. (<i>Not segmented</i>) ----- C I got cheese. C And he got pepperoni. (<i>Segmented into c-units</i>)	Allows for consistent calculation of measures affected by utterance length.
End punctuation	Identifies utterances as statements, questions, prompts, interrupted, or abandoned.	C Really? (<i>Question</i>) E And then ~ (<i>Prompt</i>) C I think we> (<i>Abandoned utterance</i>)	Prevents incomplete utterances from being included in some calculations. Allows for analysis of responses to questions and prompts.
Unintelligible segments	Marks part or all of the utterance as unintelligible.	C And then you XX here. (<i>Unintelligible segment</i>) C XXX. (<i>Unintelligible utterance</i>)	Prevents utterances with unintelligible segments from being included in some calculations. Allows for gross analysis of intelligibility.
Root word identification	Each word is transcribed in its root form. A slash separates the root word from the bound morpheme.	look, look/ing, look/ed, look/3s (<i>Infinitive, present progressive, regular past, 3rd person singular</i>) dog, dog/s, baby, baby/s (<i>Singular and plural</i>)	Prevents over-inflation of lexical diversity measures. Allows for analysis of bound morpheme production.
Mazes	Marks filled pauses, false starts, repetitions, and reformulations using parentheses.	C And (um she um) she left. C Give (it) the truck to me. (<i>Mazes within the parentheses</i>)	Prevents over-inflation of utterance length. Allows for analysis of maze production.
Omissions	Marks words, bound morphemes, and part-words omitted in obligatory context using an asterisk.	CGive it *to me. (<i>Omitted word</i>) CMy dog like/*3s me. (<i>Omitted bound morpheme</i>) CThe (b* b*) ball is there. (<i>Omitted part of word</i>)	Allows for analysis of omitted productions.

Pauses	Marks significant unfilled pauses within and between utterances using time entered as minutes:seconds or :seconds.	<p>C The :03 animal bit him. (<i>Within-utterance pause</i>)</p> <hr style="border-top: 1px dashed black;"/> <p>C She left. :05 E Where did she go? (<i>Between-utterance pause</i>)</p>	Provides a more complete transcript. Allows for analysis of pauses.
Overlapping speech	Marks where two speakers are talking at the same time using angle brackets.	<p>C What is that <called>? E <A gopher>. (<i>Words within < > overlapped between speakers</i>)</p>	Provides a more complete transcript. Allows for analysis of overlapping speech.
Timing lines	Marks the beginning and ending time of the sample using lines beginning with a hyphen.	<p>- 0:00 ... (<i>Elapsed time of five minutes and 12 seconds</i>) - 5:12</p>	Allows for analysis of transcript length and speaking rate.
Codes	Marks features of the sample not covered by standard transcription conventions using square brackets.	<p>C My mom gone[EW:went] away. (<i>Error at the word level</i>)</p> <p>C The dog fell from la[CS] ventana[CS]. (<i>Code switching in English sample</i>)</p> <p>C She[pron] lost her[pron] balance. (<i>Optional coding to tag all pronouns used</i>)</p>	Provides a method to capture any feature of interest. Allows for analysis of codes.

Note: C designates child-produced utterances and E designates examiner-produced utterances

Table 5

Summary of the SALT Standard Measures

Measure	Description
TRANSCRIPT LENGTH	
Total Utterances	Total number of utterances.
Complete & Intelligible Verbal Utterances	Number of complete and intelligible verbal utterances.
All Words Including Mazes	Total number of completed words (<i>excludes part words</i>).
Elapsed Time	Elapsed time in minutes and seconds if timing lines are inserted in transcript.
INTELLIGIBILITY	
% Intelligible Utterances	% of verbal utterances or words that do not contain unintelligible segments (<i>excludes mazes</i>).
% Intelligible Words	
MACRO ANALYSIS	
Narrative Scoring Scheme (NSS) Expository Scoring Scheme (ESS) Persuasion Scoring Scheme (PSS)	Score for macrostructure components. Included if the sample is a narrative, expository, or persuasion and the specific scoring scheme has been applied on plus lines in the transcript.
SYNTAX/MORPHOLOGY	
MLU in Words MLU in Morphemes	Mean length of utterances in words or morphemes (<i>excludes mazes</i>).
% Utterances with Verbs	Percent of utterances which contain verbs.
Mean Verbs per Utterance	Ratio of the number of verbs to the number of utterances.
Subordination Index Composite Score	Score for clausal density. Included only if the sample has been coded for Subordination Index and individual scores are inserted as codes at the end of all qualifying utterances.
SEMANTICS	
Number Total Words (NTW)	Total number of words (<i>excludes mazes</i>).
Number Different Words (NDW)	Number of different word roots (<i>excludes mazes</i>).
Moving-Average NTW Moving-Average NDW	Estimates NDW using a moving window containing a fixed number of words (NTW). TTR is the ratio of NDW to NTW.
Moving-Average Type Token Ratio	
DISCOURSE (<i>not included for narrative or expository samples</i>)	

Mean Turn Length (utterances)	Average number of consecutive utterances/words (<i>excludes mazes</i>).
Mean Turn Length (words)	
% Responses to Questions	% of another speaker's questions/intonation prompts immediately followed by an utterance of the target speaker.
% Responses to Intonation Prompts	
% Utterances with Overlapping Speech	Number of utterances containing overlapping speech.
% Utterances Interrupted Other Speaker	Number of times target speaker interrupted another speaker.
VERBAL FACILITY	
Words/Minute	Ratio of all words produced to the elapsed time (<i>excludes part words</i>).
Pause Time as % of Total Time	Percent of elapsed time that consists of pause time.
Maze Words as % of Total Words	Percent of total words that are in mazes.
% Abandoned Utterances	Percent of total utterances that were abandoned.
ERRORS	
% Utterances with Errors	Percent of utterances that contain omissions or error codes.
Number of Omissions	Number of omitted words or bound morphemes.
Number of Error Codes	Number of words or utterances coded as errors.

Lee								
TRANSCRIPT INFORMATION				DATABASE INFORMATION				
Speaker: Lee (Child) Sample Date: Current Age: 3;3 Context: Conversation (Play)				Database: Play a 30 Samples Matched by Age 30 Samples Cut at 101 Number Total Words Context: Conversation (Play)				
STANDARD MEASURES REPORT								
LANGUAGE MEASURE	Child		DATABASE					
	Score	+/-SD	Mean	Min	Max	SD	%SD	
Compared to 30 Samples Matched by Age (ENTIRE TRANSCRIPT)								
Current Age (3;3)	3.25	0.19	3.21	2.75	3.75	0.24	7%	
TRANSCRIPT LENGTH								
Total Utterances	69*	-1.22	145.70	47	289	63.08	43%	
# C&I Verbal Utts	63*	-1.23	128.47	40	236	53.01	41%	
All Words Including Mazes	119*	-1.75	488.10	152	882	210.37	43%	
Elapsed Time (5:00)	5.00*	-1.86	12.96	5.60	26.08	4.28	33%	
INTELLIGIBILITY								
h % Intelligible Utterances	92.8%	-0.40	94.31	85.66	99.06	3.84	4%	
h % Intelligible Words	95.7%	-0.89	97.43	92.70	99.72	2.00	2%	
Compared to 30 Samples Equated by Same Number of Total Words (CUT AT 101 NTW)								
SYNTAX/MORPHOLOGY								
# MLU in Words	1.60**	-2.57	3.15	2.37	5.00	0.60	19%	
# MLU in Morphemes	b 1.67**	d -2.68	c 3.43	2.51	5.50	0.66	19%	
# Verbs/Utterance	0.19**	-2.20	0.65	0.38	1.14	0.21	32%	
SEMANTICS								
# Number Total Words (NTW)	101	0.00	101.00	101	101	0.00	0%	
# i Number Different Words (NDW)	37**	-3.27	54.90	40	63	5.47	10%	
# i Type Token Ratio (TTR)	0.37**	-3.27	0.54	0.40	0.62	0.05	10%	
# i Moving-Average TTR (100)	0.37**	-3.22	0.55	0.40	0.63	0.05	10%	
DISCOURSE								
% Responses to Questions	89.5%*	1.39	69.30	44.68	100.00	14.55	21%	
Mean Turn Length (words)	2.50*	-1.74	3.93	2.48	5.94	0.83	21%	
Utterances with Overlapping Speech	12**	3.16	3.80	0	12	2.59	68%	
Interrupted Other Speaker	1**	2.51	0.13	0	1	0.35	259%	
VERBAL FACILITY								
Words per Minute	23.80*	-1.01	34.21	10.64	64.03	10.27	30%	
h Pauses Within Utterances	0	-0.28	0.27	0	5	0.94	354%	
h Pauses Between Utterances	20	0.25	16.27	0	80	14.93	92%	
h Pause Time as % of Total Time	31.3%	0.43	24.95	0.00	59.76	14.98	60%	
# h Maze Words as % of Total Words	2.9%*	-1.21	8.02	0.98	17.21	4.23	53%	
Abandoned Utterances	0	-0.95	1.30	0	5	1.37	105%	
ERRORS								
# % Utterances with Errors	19.0%	0.92	11.35	0.00	37.04	8.39	74%	
Number of Omissions	e 10**	g 3.67	f 1.93	0	8	2.20	114%	
Number of Error Codes	4	0.62	2.57	0	11	2.31	90%	
# Calculations based on C&I Verbal Utts								
* At least 1 SD (** 2 SD) from the database mean								
Database selection criteria: age +/- 6 months (2;9 - 3;9)								

- a** There were 30 samples from children in the database who were +/- 6 months of age of Lee. SALT used these 30 samples to generate the data under the “Database” heading.
- b** The first column under the “Child” heading, labeled “Score,” presents Lee’s data from his language sample. Values that are shaded are at least 1 standard deviation (SD) below the database mean. Values with one star (*) are -1 SD and values with two stars (**) are -2SD.
- c** The first column under the “Database” heading summarizes the mean values for each measure, generated from the 30 children used in this comparison. The group’s average MLU in morphemes was 3.43 (range = 2.51 – 5.5 with a .66 standard deviation).
- d** The second column under the “Child” heading, labeled “+/- SD,” shows the actual number of standard deviations that Lee varied from the database. We see that Lee was 2.68 standard deviations *below* the database for MLU in morphemes.
- e** “Omissions” includes all the words and morphemes that were not produced but *should* have been produced because they occurred in an obligatory context. For example, Lee asked, “What that,” omitting the obligatory word “is.” Please note, Lee is a speaker of mainstream midwestern English.
- f** As seen in the “Mean” column within the “Database” section, the 30 children in the database omitted, on average, 1.93 words and morphemes.
- g** Lee’s omission of 10 words and morphemes was 3.67 standard deviations above the database mean.
- h** Lee’s performance on these measures were, overall, similar to the children in the database.
- i** The three lexical diversity measures were each > -3 standard deviations from Lee’s peers. The two Type-Token Ratio (TTR) measures document the ratio of different words to total words, with Moving Average TTR incorporating additional computations to reduce the influence of sample length (which can impact the validity of traditional TTR).

Laura																
TRANSCRIPT INFORMATION							DATABASE INFORMATION									
Speaker: Laura (Child) Sample Date: Current Age: 7;3, Grade: 1 Context: Narration (FWAY)							Database: Bilingual Spanish Story Retell 117 Samples Matched by Age & Grade Entire transcript Context: Narration (FWAY)									
MAZE SUMMARY																
Calculations Based on Entire Transcript																
LANGUAGE MEASURE	Child			DATABASE												
	Score	+/-SD		Mean	Min	Max	SD	%SD								
Number Total Words	75 **	-2.03		234.28	12	417	78.35	33%								
Total Maze Words	47	0.63		30.20	0	122	26.48	88%								
Maze Words as % of Total Words	38.5% **	3.40		10.66	0.00	37.70	8.19	77%								
Total Number of Mazes	16	0.11		14.76	0	50	11.69	79%								
Average Words per Maze	2.94 *	1.47		1.78	0.00	3.67	0.79	44%								
Total Verbal Utterances	12 **	-2.21		36.51	2	66	11.10	30%								
Average Mazes per Utterance	1.33 **	3.08		0.40	0.00	1.25	0.30	75%								
Utterances with Mazes	9	-0.30		11.41	0	31	8.16	71%								
Utts with Mazes as % of Total Utts	75.0% **	2.20		31.00	0.00	76.92	20.02	65%								
Revisions																
Part Word	0	-0.56		0.62	0	6	1.11	180%								
Word	6	0.60		3.93	0	13	3.48	88%								
Phrase	7	0.50		4.81	0	20	4.37	91%								
Repetitions																
Part Word	1	0.34		0.64	0	5	1.07	167%								
Word	8	0.26		6.28	0	30	6.66	106%								
Phrase	3	0.51		1.81	0	13	2.32	128%								
Filled Pauses																
Single Word	0	-0.40		1.11	0	23	2.81	253%								
Multiple Words	0	-0.22		0.23	0	10	1.03	446%								
* At least 1 SD (** 2 SD) from the database mean																
MAZE DISTRIBUTION TABLES																
% of Utterances with Mazes by Utterance Length in Morphemes																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15+	Total
Child	0%	0%	50%	0%	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%	75%
DB Mean	2%	9%	18%	22%	23%	29%	34%	38%	33%	34%	29%	26%	17%	23%	31%	95%
Number of Mazes by Utterance Length in Morphemes																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15+	Total
Child	0	0	2	0	4	0	0	5	0	2	0	0	3	0	0	16
DB Mean	0	0	1	1	2	2	2	2	1	1	1	1	0	0	1	15
Number of Mazes by Maze Length in Morphemes																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15+	Total
Child	7	6	0	0	1	0	1	0	0	0	0	0	0	0	1	16
DB Mean	7	4	2	1	0	0	0	0	0	0	0	0	0	0	0	14
Database selection criteria: age +/- 2 months (7;1 - 7;5), grade 1																

LANGUAGE MEASURE			Child		DATABASE				
			Score	+/-SD	Mean	Min	Max	SD	%SD
TRANSSCRIPT INFORMATION									
Speaker: Laura (Child)					DATABASE INFORMATION				
Sample Date:					Database: Bilingual Spanish Story Retell				
Current Age: 7;3, Grade: 1					117 Samples Matched by Age & Grade				
Context: Narration (FWAY)					Entire transcript				
					Context: Narration (FWAY)				
RATE AND PAUSE SUMMARY									
Calculations Based on Entire Transcript									
RATE SUMMARY									
Elapsed Time (2:40)			2.67	-0.83	4.02	0.73	12.15	1.63	40%
Words per Minute			53.63	-0.86	71.24	8.26	126.63	20.55	29%
Utterances per Minute			6.00*	-1.44	10.14	1.52	19.30	2.88	28%
PAUSE SUMMARY									
Pauses Within Utterances									
No. of pauses			2	-0.14	2.42	0	15	3.01	125%
Total pause time (seconds)			6	-0.23	8.85	0	62	12.55	142%
Average pause time (seconds)			3.00	-0.27	3.42	2.00	10.00	1.52	45%
Pauses Between Utterances									
No. of pauses			6	0.06	5.66	0	26	5.29	93%
Total pause time (seconds)			23	0.10	20.84	0	114	22.69	109%
Average pause time (seconds)			3.83	0.42	3.41	2.00	6.50	1.01	30%
Pause Time as % of Total Time			18.1%	0.13	16.88	0.00	36.81	9.29	55%
* At least 1 SD (** 2 SD) from the database mean									
Database selection criteria: age +/- 2 months (7;1 - 7;5), grade 1									

David							
TRANSCRIPT INFORMATION			DATABASE INFORMATION				
Speaker: David (Child)			Database: Narrative Story Retell				
Sample Date:			57 Samples Matched by Grade				
Current Age: 15;8, Grade: 10			Entire transcript				
Context: Narration (FWAY)			Context: Narration (FWAY)				
NARRATIVE SCORING SCHEME							
Compared to 57 Samples Matched by Grade							
NSS Category	Child		DATABASE				
	Score	+/-SD	Mean	Min	Max	SD	%SD
Introduction	1 *	-1.88	2.65	0	4	0.88	33%
Character Development	2	-1.78	2.98	2	5	0.55	18%
Mental States	1 *	-1.60	2.18	1	4	0.73	34%
Referencing	3	-0.30	3.25	1	5	0.83	26%
Conflict Resolution	2 *	-1.85	3.02	1	4	0.55	18%
Cohesion	2 *	-1.64	3.07	1	5	0.65	21%
Conclusion	2 *	-1.37	3.04	1	5	0.76	25%
NSS Composite Score	13 **	-2.61	20.18	12	26	2.75	14%
<i>* At least 1 SD (** 2 SD) from the database mean</i> <i>Database selection criteria: grade 1</i>							



Play – Elicitation Protocol

Database	Context (Subgroup)	Age Range	Grade in School	# Samples	Location	Special Coding
Play	Con (Play)	2;8 – 5;8	P, K	69	WI	SI

Elicitation method

The database samples were elicited with an examiner engaged in play with the child and is the preferred method for elicitation. If you choose to elicit a play sample in a virtual session where the child plays with his/her parent/guardian, be aware that there may be differences in the outcomes. To minimize differences, make sure the parent is familiar with the elicitation protocol.

- In-person session: Seat the child near you, either at a table or on the floor. Record the sample using a phone, tablet, or digital recorder.
- Virtual session: Have the parent/guardian and child seated together, either at a table or on the floor. Record the sample using a phone, tablet, digital recorder, or the recorder built into the software you are using to host the virtual meeting, e.g., Zoom.

Examiner's Role

- Participate in the play.
- Encourage to child to talk.
- Follow the child's suggestions and leads.
- Request directions.
- Ask for clarification if necessary.
- Comment on the child's activity.
- Avoid asking a lot of yes/no questions as these often lead to obvious and limited responses/answers.

Examples of questions used to promote expressive language:

"I've bought some play dough for us to play with today. What should we make together?"

"Let's make ---. What do we need to do to make it?"

"Here are two cows. What should we do with them?"

"What other animals go in the barn?"

"Where do think this car should go?"



Conversation – Elicitation Protocol

Database	Context	Age Range	Grade in School	# Samples	Location	Special Coding
Conversation	Con	2;9 – 13;3	P, K, 1, 2, 3, 5, 7	584	WI & CA	SI

Elicitation Method

The sample may be elicited with the target speaker seated near you, or it may be elicited in a virtual session. Both methods should result in similar outcomes (Kim, 2016; Manning et al., 2020). All samples should be recorded for later transcription.

- In-person session: Seat the speaker near you, either across the table or next to you. Record the sample using a phone, tablet, or digital recorder.
- Virtual session: Record the sample using a phone, tablet, digital recorder, or the recorder built into the software you are using to host the virtual meeting, e.g., Zoom.

Directions

Use one or more of the following conversational topics. Suggested questions and prompts are listed for each topic. Introduce at least one topic absent in time and space from the sampling condition, e.g. for holidays, "*What did you do?*" or "*What will you do?*".

1. Classroom activities

"Tell me about some of the things you've been doing in school lately."

Ask about specific classroom units.

2. Holidays

"Did you do anything special for Halloween (or appropriate holiday)?"

"Tell me about that."

"Are you going to do anything special for Christmas?"

3. Family activities, visits, locations, etc.

"Are you going to visit your grandma and grandpa?"

"Where do they live?" "How do you get there?" "What do you do there?"

4. Family pets

"Do you have any pets at home?" "Tell me about them."

"What do you have to do to take care of them?"

"Do they ever get in trouble?"

Examiner's Role

- Be an attentive conversational partner.
- Use eye contact, positive body language and facial expressions.
- Encourage the speaker to talk.
- Take turns talking.
- Ask for clarification if necessary.
- Avoid asking a lot of yes/no questions as these often lead to obvious and limited responses/answers.
- Keep it a conversation. Avoid topics that may result in a narrative, e.g., "Oh, you saw a movie last weekend. Tell me about it."

References

Kim, Y. S. G. (2016). Do Live Versus Audio-Recorded Narrative Stimuli Influence Young Children's Narrative Comprehension and Retell Quality?, *Language, Speech, and Hearing Services in Schools*, 47(1), 77-86.

Manning, B., Harpole, A., Harriott, E., Postolowicz, K., & Norton, E. (2020). Taking Language Samples Home: Feasibility, Reliability, and Validity of Child Language Samples Conducted Remotely with Video Chat Versus In-Person.



Narrative SSS – Elicitation Protocol

Database	Context (Subgroup)	Age Range	Grade in School	# Samples	Location	Special Coding
Narrative SSS	Nar (SSS)	5;2 – 13;3	K, 1, 2, 3, 5, 7	330	WI	SI

The Narrative SSS (speaker selects story) elicitation protocol provides an opportunity for the target speaker to produce a narrative sample based on a story of their choosing. Following the script below, the speaker is asked to select a story and then tell the examiner about it.

Elicitation Method

The sample may be elicited with the speaker seated near you or via a virtual session. Both methods should result in similar outcomes (Kim, 2016; Manning et al., 2020). All samples should be recorded for later transcription.

- **In-person session:** Seat the speaker near you, either across the table or next to you. Record the sample using a phone, tablet, or digital recorder.
- **Virtual session:** Record the sample using a phone, tablet, digital recorder, or the recorder built into the software you are using to host the virtual meeting, e.g., Zoom.

Narrative SSS Elicitation Script

Use one of the following narrative tasks. Suggested questions and prompts are listed below.

1. Tell about a movie s/he saw.
“Do you go to the movies?”, *“Do you watch movies at home?”*, *“Do you own any movies?”*, *“What’s your favorite movie?”*, *“What’s the last movie you saw?”*
2. Tell about a book s/he read.
“Have you read any good books lately?”, *“What’s your favorite book?”*,
“Have you read (insert current books likely to be of interest)?”
3. Retell an episode from a TV program.
“What TV programs do you like to watch?”, *“Tell me about that one. I haven’t seen it.”*, *“What happened on the last one you watched?”*,
“Do you ever watch (insert current programs likely to be of interest)?”
4. **With young children:** Retell a familiar story such as *Goldilocks and the Three Bears*, *Little Red Riding Hood*, and *The Three Little Pigs*. Picture prompts should only be used after every attempt is made to elicit spontaneous speech. This is not a labeling activity.
“Do you know any stories?”, *“What is one of your favorite stories?”*,
“Oh, I don’t know that one very well. Will you tell it?”,
“Do you know Little Red Riding Hood, etc.? Oh, tell me that story.”

Examiner's Role

The role of the examiner is to let the target speaker do most, if not all, of the talking.

- Be an attentive listener.
- If the speaker is unable to begin, use the prompt *"One day..."*, or *"Once upon a time..."*.
- If the speaker stops before their story is finished, prompt, *"Tell me more," "Keep going," "You are doing a great job," "And then..."* .
- Use nonverbal cues such as head nodding and smiling to promote continued talking.
- Avoid asking the "wh" questions, who?, what?, when?, where? as these often lead to obvious and limited responses/answers.
- Using overly-specific questions or providing too much information compromises the process of capturing the speaker's true language and ability level. Open-ended prompts *do not* provide answers or vocabulary. They *do* encourage the speaker to try or they let them know it is ok to move on if needed.
- Keep it a narrative. Avoid comments that may result in a conversation, e.g., "Was it a good movie? How long ago did you see it?"

References

- Kim, Y. S. G. (2016). Do Live Versus Audio-Recorded Narrative Stimuli Influence Young Children's Narrative Comprehension and Retell Quality?, *Language, Speech, and Hearing Services in Schools*, 47(1), 77-86.
- Manning, B., Harpole, A., Harriott, E., Postolowicz, K., & Norton, E. (2020). Taking Language Samples Home: Feasibility, Reliability, and Validity of Child Language Samples Conducted Remotely with Video Chat Versus In-Person.



Narrative Story Retell - Elicitation Protocol

Database	Context (Subgroup)	Age Range	Grade in School	# Samples	Location	Special Coding
Narrative Story Retell	Nar (FWAY)	3;6 – 7;5	P, K, 1	174	WI & CA	SI, NSS
	Nar (PGHW)	7;0 – 8;11	2	101		
	Nar (APNF)	7;11 – 9;11	3	53		
	Nar (DDS)	9;3 – 12;8	4, 5, 6	201		

There are different ways to provide the story model and record the target speaker’s story. All methods should result in similar outcomes (Kim, 2016; Manning et al., 2020). Record all samples for later transcription and analysis.

Preschool, Kindergarten, and Grade 1

Use the following story:

FWAY: *Frog, Where Are You?* (Mayer, 1969)

Option 1: In-person or virtual session using SALT’s *Online Story Elicitation – Monolingual English / English Fluent program*

Select the FWAY story and follow the prompts. For an in-person session, use the recorder built into the program. For a virtual session, use an alternate recorder, e.g., smart phone, digital recorder, or the recorder built into the software you are using to host the virtual meeting, e.g., Zoom.

Option 2: In-person session using physical book

Have the speaker seated next to you with the book in front of you. Provide the story model while looking at the pictures in the book. There are two ways to present the story model.

- Play a recording of the FWAY story, which can be downloaded from the SALT web site at www.saltsoftware.com/resources/elicids/frogstories/.
Say, “I would like to find out how you tell stories. First, we are going to listen to the story while we follow along in the book. When we have finished listening to the story, it will be your turn to tell the story using the same book.” Play the audio. Turn each page while the speaker listens. Make sure the speaker is looking at the book.
- Tell the story to the speaker, loosely following the script provided (*see page 4*). You do not need to memorize the story script, just become familiar enough to tell the story.
Say, “I would like to find out how you tell stories. First, I am going to tell you a story while we follow along in the book. When I have finished telling you the story, it will be your turn to tell the story using the same book.” Tell the story, turning each page while the speaker listens. Make sure the speaker is looking at the book.

After providing the story model, prepare the recorder and say, “Now I would like you to use your own words to tell the story.”

Turn the book to the first page with pictures and start recording. Say, *“Do the best that you can. Now you tell me the story.”*

Grades 2 and 3

Use the following stories:

PGHW: *Pookins Gets Her Way* (Lester, 1987) for 2nd grade

APNF: *A Porcupine Named Fluffy* (Lester, 1986) for 3rd grade

Option 1: In-person or virtual session using SALT’s Online Story Elicitation – Monolingual English / English Fluent program

Select PGHW (for 2nd graders) or APNF (for 3rd graders) and follow the prompts. For an in-person session, use the recorder built into the program. For a virtual session, use an alternate recorder e.g., smart phone, digital recorder, or the recorder built into the software you are using to host the virtual meeting, e.g., Zoom.

Option 2: In-person session using physical books

Use 2 copies of the book, one with the text covered. Have the speaker seated next to you with the book (text visible) in front of you.

Show the book to the speaker, and say *“I would like to find out how you tell stories. First, I will read this story to you while you follow along. Then I’m going to ask you to tell the story using your own words.”* Read the story. Make sure the speaker is looking at the book.

After reading the story, prepare the recorder. Give the speaker the copy of the book with the text covered and say, *“Now I would like you to tell the story. Notice that the words are covered up. That’s because I want you to use your own words to tell the story.”*

Turn to the first page with pictures and start recording. Say, *“Do the best that you can. Now you tell me the story.”*

Grades 4, 5, and 6

Use the following story:

DDS: *Doctor De Soto* (Steig, 1982)

In-person session using physical books (the Online Story Elicitation program does not include DDS)

Use 2 copies of the book, one with the text covered. Have the speaker seated next to you with the book (text visible) in front of you.

Show the book to the speaker, and say, *“I would like to find out how you tell stories. First, I will read this story to you while you follow along. Then I’m going to ask you to tell the story using your own words.”* Read the story. Make sure the speaker is looking at the book.

After reading the story, prepare the recorder. Give the speaker the copy of the book with the text covered and say, *“Now I would like you to tell the story. Notice that the words are covered up. That’s because I want you to use your own words to tell the story.”*

Turn to the first page with pictures and start recording. Say, *“Do the best that you can. Now you tell me the story.”*

Examiner's Role

The role of the examiner in the story retell task is to let the target speaker do most, if not all, of the talking. In an in-person session, move slightly away from the speaker, turning so that eye contact is easy. The speaker should be in charge of page turning during the retell. Provide assistance if the speaker has trouble properly turning pages. Moving away from the speaker promotes language and minimizes pointing.

- Be an active listener.
- Use minimal prompts only as necessary.
- Verbal prompts should be open-ended (should not provide answers or vocabulary) e.g., tell me more, keep going, and then~, you are doing a great job!
- Non-verbal prompts such as nodding and smiling may promote continued talking.
- Avoid asking yes/no and specific WH questions such as “who”, “what”, “when”, “where”, as these may lead to limited responses.
- Encourage the target speaker to try.
- If necessary, let the speaker know it is OK to move on.

Comprehension Questions (optional)

Following the speaker's retell, you have the option of evaluating his/her understanding of the story by asking a series of comprehension questions. A description of the comprehension questions can be found on the SALT website at Products → Elicitation Materials. The Narrative Story Retell database samples were not scored for comprehension.

References

- Kim, Y. S. G. (2016). Do Live Versus Audio-Recorded Narrative Stimuli Influence Young Children's Narrative Comprehension and Retell Quality?, *Language, Speech, and Hearing Services in Schools*, 47(1), 77-86.
- Lester, H. (1987). *Pookins Gets Her Way*, Boston, MA: Houghton Mifflin Co.
- Lester, H. (1986). *A Porcupine Named Fluffy*, Boston, MA: Houghton Mifflin Co.
- Manning, B., Harpole, A., Harriott, E., Postolowicz, K., & Norton, E. (2020). Taking Language Samples Home: Feasibility, Reliability, and Validity of Child Language Samples Conducted Remotely with Video Chat Versus In-Person.
- Mayer, M. (1969). *Frog, Where Are You?*, New York, NY: Dial Press.
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Story Script for *Frog, Where Are You?* by Mercer Mayer, 1969

Page	Script
1	There once was a boy who had a dog and a pet frog. He kept the frog in a large jar in his bedroom.
2 – 3	One night while he and his dog were sleeping, the frog climbed out of the jar. He jumped out of an open window. When the boy and the dog woke up the next morning, they saw that the jar was empty.
4 – 5	The boy looked everywhere for the frog. The dog looked for the frog too. When the dog tried to look in the jar, he got his head stuck. The boy called out the open window, “Frog, where are you?” The dog leaned out the window with the jar still stuck on his head.
6 – 7	The jar was so heavy that the dog fell out of the window headfirst! The boy picked up the dog to make sure he was ok. The dog wasn’t hurt but the jar was smashed.
8 - 9	The boy and the dog looked outside for the frog. The boy called for the frog.
10 – 11	He called down a hole in the ground while the dog barked at some bees in a beehive. A gopher popped out of the hole and bit the boy right on his nose. Meanwhile, the dog was still bothering the bees, jumping up on the tree and barking at them.
12 – 13	The beehive fell down and all of the bees flew out. The bees were angry at the dog for ruining their home. The boy wasn’t paying any attention to the dog. He had noticed a large hole in a tree. So he climbed up the tree and called down the hole.
14 – 15	All of a sudden an owl swooped out of the hole and knocked the boy to the ground. The dog ran past the boy as fast as he could because the bees were chasing him.
16 – 17	The owl chased the boy all the way to a large rock. The boy climbed up on the rock and called again for his frog. He held onto some branches so he wouldn’t fall.
18 – 19	But the branches weren’t really branches! They were deer antlers. The deer picked up the boy on his head. The deer started running with the boy still on his head. The dog ran along too. They were getting close to a cliff.
20 - 21	The deer stopped suddenly and the boy and the dog fell over the edge of the cliff.
22 – 23	There was a pond below the cliff. They landed with a splash right on top of one another. They heard a familiar sound.
24 – 25	The boy told the dog to be very quiet. They crept up and looked behind a big log.
26 – 27	There they found the boy’s pet frog. He had a mother frog with him. They had some baby frogs and one of them jumped toward the boy.
28 - 29	The baby frog liked the boy and wanted to be his new pet. The boy and the dog were happy to have a new pet frog to take home. As they walked away the boy waved and said “goodbye” to his old frog and his family.



SALT Expository - Elicitation Protocol

SOFTWARE

Database	Context	Age Range	Grade in School	# Samples	Location	Special Coding
Expository	Expo	10;7 – 18;9	5-7, 9-12	354	WI	SI, ESS

Elicitation Method

The sample may be elicited with the speaker seated near you or via a virtual session. Both methods should result in similar outcomes (Kim, 2016; Manning et al., 2020). Record all samples for later transcription and analysis.

Follow the directions below. The target speaker is asked to explain how to play a game or sport of their choosing. The speaker is given a few minutes to complete the planning sheet which lists the points that should be covered (*last page*). Following the planning phase, the speaker is asked to explain the game or sport using their notes. Using this protocol, expository samples are typically between 5 – 6 minutes in length.

- In-person session: Seat the speaker across the table or next to you. Have the planning sheet ready to hand over. Record the sample using a phone, tablet, or digital recorder.
- Virtual session: Send a copy of the expository planning sheet to the speaker ahead of time with instructions to print it out for the session. Record the sample using a phone, tablet, digital recorder, or the recorder built into the software you are using to host the virtual meeting, e.g., Zoom.

Directions

Say, ***“I’m interested in finding out how well you do at giving explanations. I’m going to make a recording so I can remember what you say. I want you to imagine that I am a student about your age. I’m visiting the United States from another country and I want to learn as much as I can about life in the U.S. You can help me by explaining how to play your favorite sport or game. You have lots of choices. For example, you could pick a sport, such as basketball or tennis. You could pick a board game, such as Monopoly or chess. Or you could pick a card game, such as poker or rummy. What sport or game do you want to pick?”***

If the speaker does not offer a choice or the choice is inappropriate, reread the examples given above and/or add more examples to encourage or aid the speaker. Discourage talking about video games as this often results in limited content.

Say, ***“Assume that in my country we don’t play [insert name of sport or game]. I’d like you to explain everything I would need to know so I could learn to play. I’ll expect you to talk for at least five minutes.”***

- In-person session: Say, ***“To help you organize your thoughts, here’s a list of points I’d like you to include.”*** Hand the speaker a copy of the planning sheet.

- **Virtual session:** Direct the speaker to look at the planning sheet. Say, ***“Use the planning sheet to help you organize your thoughts. It has a list of points I’d like you to include.”*** If the speaker does not have a printout of the planning sheet, share your copy of the planning sheet on the screen and ask the speaker to take notes on a blank sheet of paper, writing the label of each point followed by his/her notes.

Say, ***“Please take the next few minutes to plan your explanation by taking notes in the blank spaces. But don’t waste time writing sentences. Just write some key words to remind you of what you want to say. You can talk about the points in the order they are listed, or else you can number the points any way you wish. If you don’t want to take notes, you can use the backside of the list to draw a diagram or make a graphic organizer. Do you have any questions?”***

If the speaker has difficulty reading any portion of the checklist, read the unclear portions aloud. If the speaker has difficulty understanding the vocabulary, give an example from a sport or game different from the one chosen.

Say, ***“Go ahead and start planning.”***

Allow enough time for the speaker to write something for all of the points or to complete a diagram or graphic organizer. Verify that the speaker has done some planning for each point. If not, prompt with, ***“Please do some planning for [insert name(s) of omitted point(s)].”***

Say, ***“I’m ready to turn on the recorder. You will be doing all the talking. I’m going to listen to what you have to say. Take as much time as you need to give a complete explanation. Remember: I expect you to talk for at least five minutes.”***

Turn on recording device and have the speaker begin. If the speaker finishes before five minutes has elapsed, prompt with, ***“Is there anything else you can tell me?”*** After speaking with the assistance of the planning sheet, turn off recording device. If possible, review the recording for quality before releasing the speaker.

Examiner’s role during the exposition

The role of the examiner in the expository task is to let the target speaker do the talking. Asking questions or providing too much information compromises the process of capturing the speaker’s true language and ability level.

- Be an attentive listener.
- Use minimal prompts only as necessary.
- Do not give specific cues during the task.
- Use non-verbal prompts such as nodding and smiling to promote continued talking.
- You may use non-specific verbal prompts such as “uh huh” and “keep going”.

References

- Kim, Y. S. G. (2016). Do Live Versus Audio-Recorded Narrative Stimuli Influence Young Children's Narrative Comprehension and Retell Quality?, *Language, Speech, and Hearing Services in Schools*, 47(1), 77-86.
- Manning, B., Harpole, A., Harriott, E., Postolowicz, K., & Norton, E. (2020). Taking Language Samples Home: Feasibility, Reliability, and Validity of Child Language Samples Conducted Remotely with Video Chat Versus In-Person.

What to Talk About When Explaining a Game or Sport

Points	What's Covered	Notes
Object	What you have to do to win	
Preparations	Playing Area and Setup Equipment and Materials What players do to get ready	
Start	How the contest begins, including who goes first	
Course of Play	What happens during a team or player's turn, including any special plays, positions, or roles, both offensive and defensive	
Rules	Major rules, including penalties for violations	
Scoring	Different ways to score, including point values	
Duration	How long the contest lasts, including how it ends and tie breaking procedures	
Strategies	What smart players do to win, both offensively and defensively	

Please use the reverse of this page for an optional diagram or graphic organizer, or for additional notes.



Persuasion - Elicitation Protocol

Database	Context	Age Range	Grade in School	# Samples	Location	Special Coding
Persuasion	Pers	USA: 14;8 – 18;9 AU: 12;10 – 18;4	USA: 9-12 AU: N/A	USA: 113 AU: 66	WI Australia	SI, PSS

Elicitation Method

The sample may be elicited with the speaker seated near you or via a virtual session. Both methods should result in similar outcomes (Kim, 2016; Manning et al., 2020). Record all samples for later transcription and analysis.

Follow the directions below. The speaker is asked to choose a topic of interest and persuade his/her audience to agree with their argument. The speaker given a few minutes to select an issue, either from the list of suggested issues (*see end of document*) or one of their own choosing. The speaker is then given a few minutes to complete the planning sheet (*see end of document*). Listed next to each point is a brief description of what's covered and space for making notes. Following the planning phase, the speaker is asked to narrate their persuasive argument using their notes. Using this protocol, samples tend to be between 3 - 4 minutes in length.

- In-person session: Seat the speaker across the table or next to you. Have the list of suggested issues and the planning sheet ready to hand over. Record the sample using a phone, tablet, or digital recorder.
- Virtual session: Send a copy of the list of suggested issues and the planning sheet to the speaker ahead of time with instructions to print them out for the session. Record the sample using a phone, tablet, digital recorder, or the recorder built into the software you are using to host the virtual meeting, e.g., Zoom.

Directions

Say, ***“Today I want to find out how well you can persuade. That’s when you talk people into changing their mind and doing something you want. I’m going to make a recording. If you want, you can listen to it when we’re finished.”***

I would like you to pick a rule or situation you would like to see changed in your school, job, or community. Imagine that I am an adult who has the power to make the change that you want. Here are a few examples:

- 1. Pretend I’m the principal of your school and you want to persuade me to provide money for a special event; OR***
- 2. Pretend I’m your boss and you want to persuade me to change your hours or work schedule; OR***
- 3. Pretend I’m a government official and you want me to change the law so that taxes are raised or lowered for a specific purpose.***

I expect you to talk for at least a few minutes, so be sure to pick an issue you know and care about.

Take a few minutes to look over this list of suggested issues. You can choose an issue from this list or else pick one of your own”.

Allow the speaker time to review the suggested issues before asking: ***“What issue have you picked?”***

If the speaker has difficulty choosing an issue, offer assistance. Review the list together. If a proposed topic is not an arguable issue (e.g., strawberry ice cream is better than chocolate), encourage a different choice. If a proposed issue is too narrow, encourage the speaker to modify it. For example, if the speaker wants to argue for a change to his or her individual grade in a particular class, suggest the issue be broadened into an argument for a school-wide change to the grading policy.

Once an appropriate issue has been selected, clarify the intended target of the persuasion, e.g., principal, boss, government official, by asking, ***“Who will you be trying to persuade?”***

If there is a mismatch between the issue and the authority figure, help the speaker resolve the problem. For example, if a speaker wishes to convince a boss to raise the minimum wage, help the them understand that this argument is best directed toward a government official. Once a match has been established between issue and authority figure, proceed to the planning directions.

Say, ***“Talk to me as if I’m your [name the appropriate authority, e.g., principal, boss, senator] and tell me everything you can to persuade me. To do your best job, you’ll first need to organize your thoughts.”***

- ***In-person session:*** Say, ***“Here’s a list of points you’ll need to cover to make a complete argument.”*** Hand the speaker a copy of the planning sheet.
- ***Virtual session:*** Direct the speaker to look at the planning sheet. Say, ***“Use the planning sheet to help you organize your thoughts. It has a list of points you’ll need to cover to make a complete argument.”*** If the speaker does not have a printout of the planning sheet, share your copy of the planning sheet on the screen and ask the speaker to take notes on a blank sheet of paper, writing the label of each point followed by his/her notes.

“Please take the next few minutes to plan by making notes in the blank spaces. But don’t waste time writing sentences. Just write down some key words to remind you of what you want to say. You can talk about the points in the order they are listed, or else you can number the points any way you wish. Do you have any questions?”

If the speaker has difficulty understanding the planning sheet, read the unclear portions aloud. If the speaker has difficulty understanding the vocabulary, give an example from an issue different from the one chosen.

Say, ***“Go ahead and start planning.”***

Allow enough time for the speaker to write something for all the points on the planning sheet. Verify that the speaker has done some planning for each point. If not, prompt with, ***“Please do some planning for [insert name(s) of omitted point(s)].”***

When the speaker has finished planning, continue with: ***“When I turn on the recorder, you will be doing all the talking. I’m going to listen to what you have to say. Tell me everything you can think of. It’s OK to look at your planning sheet to remind yourself of what you want to say. Feel free to add to what you’ve written. Remember: I expect you to talk for as long as you can.”***

Turn on recording device and have the speaker begin. If the speaker finishes before several minutes have elapsed or has not discussed one or more points on the planning sheet, prompt with: ***“Is there anything else you can tell me?”***

When the speaker has finished, turn off the recorder. If possible, review the recording for quality before releasing the speaker.

Examiner’s role during the persuasion

The role of the examiner in the persuasion task is to let the target speaker do the talking. Do not engage the speaker in a debate. Asking questions or providing too much information compromises the process of capturing the speaker’s true language and ability level.

- Be an attentive listener.
- Use minimal prompts only as necessary.
- Do not give specific cues during the task.
- Use non-verbal prompts such as nodding and smiling to promote continued talking.
- You may use non-specific verbal prompts such as “uhhuh” and “keep going”.

References

Kim, Y. S. G. (2016). Do Live Versus Audio-Recorded Narrative Stimuli Influence Young Children's Narrative Comprehension and Retell Quality?, *Language, Speech, and Hearing Services in Schools*, 47(1), 77-86.

Manning, B., Harpole, A., Harriott, E., Postolowicz, K., & Norton, E. (2020). Taking Language Samples Home: Feasibility, Reliability, and Validity of Child Language Samples Conducted Remotely with Video Chat Versus In-Person.

Persuasion Topics List

Changing the time school starts in the morning
Allowing students to leave campus during the school day without special permission
Requiring students to do graded homework
Requiring students to take foreign language classes
Allowing teachers to socialize with students on social networks such as Facebook, Twitter, Snap Chat, Instagram, etc...
Including grades in physical education classes in students' grade point average
Allowing students to listen to their music using headphones during free periods
Changing the access teenagers have to entertainment that is violent or sexually suggestive; entertainment includes movies, music, and video games
Requiring school uniforms or a dress code for students
Awarding cash or other incentives to students who earn good grades
Replacing traditional textbooks with notebook computers or digital materials
Requiring cities to provide free wireless Internet access in public spaces
Requiring people to get a license in order to become parents
Allowing alternatives to jail, such as counseling or public service, for convicted criminals
Requiring colleges to pay their student athletes a salary for playing
Requiring drug tests for professional athletes
Allowing employers to require drug tests as part of their hiring procedure
Requiring workers to pay for their own work uniforms or equipment
Raising the minimum wage
Changing the minimum age for voting, drinking, driving, or holding a job
Other: Topic of your choice

Name _____

Date _____

I am talking to my _____ *i.e., principal, boss, government official*

What to Talk about When Trying to Persuade Someone

Points	What's Covered	Notes
Issue ID and Desired Change	What rule or situation do you want changed? What would you change it to?	
Supporting Reasons	What facts or values or evidence helps your side? Be sure to include how your change would help or benefit the listener or people the listener cares about.	
Counter Arguments -- Other Point of View	What are some good reasons on the other side?	
Response to Counter Arguments	What can you say to knock down or weaken the reasons on the other side? What reasons on the other side can you can agree with, either in whole or in part?	
Compromises	If you can't get your way 100%, what deals would be acceptable so each side wins a little?	
Conclusion	Briefly sum up your position: What do you want? Why do you want it? What are the first steps needed to make the change happen?	

Please use the reverse of this page for an optional diagram or graphic organizer, or for additional notes.



Bilingual Spanish/English & Monolingual Spanish - Elicitation Protocol

Database	Context (Subgroup)	Age Range	Grade in School	# Samples	Location	Special Coding
Bilingual Spanish/English Story Retell	Nar (FWAY)	5;0 – 9;9	K, 1, 2, 3	2,070	TX & CA	SI, NSS
	Nar (FGTD)	5;5 – 8;11	K, 2	1,667		
	Nar (FOHO)	6;0 – 7;9	1	930		
Bilingual Spanish/English Unique Story	Nar (OFTM)	5;0 – 9;7	K, 1, 2, 3	475	TX & CA	SI, NSS
Monolingual Spanish Story Retell	Nar (FWAY)	5;10 – 9;11	1, 2, 3	366	Mexico	SI, NSS
	Nar (FGTD)	6;4 – 10;6	1, 2, 3	360		
	Nar (FOHO)	6;1 – 10;1	1, 2, 3	188		
	Nar (OFTM)	6;9 – 10;7	1, 2, 3	154		

There are different ways to provide the story model and record the target speaker’s story. All methods should result in similar outcomes (Kim, 2016; Manning et al., 2020). Record all samples for later transcription and analysis.

This task uses the following wordless picture books:

- FWAY: *Frog, Where Are You?* (Mayer, 1969)
- FGTD: *Frog Goes to Dinner* (Mayer, 1974)
- FOHO: *Frog On His Own* (Mayer, 1973)
- OFTM: *One Frog Too Many* (Mayer & Mayer, 1975)

Bilingual Spanish/English or Monolingual Spanish?

Minimally, an English Learner (EL) should be able to produce at least one complete and intelligible utterance in both languages for this assessment. Otherwise, consider the participant to be a monolingual speaker.

Target language

All instructions and prompts should be in the language targeted in the elicitation.

Bilingual (Spanish/English) participants: If the speaker’s performance is below average compared to age and grade-matched peers, or if you want to assess the speaker’s performance in both languages, elicit a second sample in the other language. You may choose to elicit the second sample using the same story or a different story.

Story retell or Unique (tell) story task

This task is either a story retell or a unique/tell story (refer to the table above). With the story retell task, the story is modeled for the speaker in the target language (*Spanish or English*). Then the speaker is

asked to retell the same story. With the unique story task, the protocol assumes that the speaker has had experience **retelling** at least one other story. This is important because the story is not modeled. The speaker is shown the story and then asked to tell the story in their own words.

Elicitation method

Option 1: In-person or virtual session using SALT's *Online Story Elicitation – Bilingual Spanish/English & Monolingual Spanish* program

Select the category (Bilingual Spanish/English or Monolingual Spanish), the target language (Spanish or English), and the story. Follow the prompts. If this in an in-person session, use the recorder built into the program. If eliciting the sample virtually, use an alternate recorder, e.g., a phone, the recorder built into Zoom or other software for hosting virtual meetings.

Option 2: In-person session using physical book

Have the speaker seated next to you with the book in front of you.

- Story retell task

Provide the story model **in the target language** while looking at the pictures in the book. There are two ways to present the story model.

1. Play a recording of the story script which comes with the *Frog Story Elicitation Kit*. You can also download the audios from the SALT web site at <https://www.saltsoftware.com/resources/elicaids/frogstories>.

Directions to the speaker (English sample):

Say *"Here is a book. We are going to listen to this story while we look at the book together. When we finish, I want you to tell the story back to me in English. Ok? Let's look at the book."*

Directions to the speaker (Spanish sample):

Say *"Aquí tengo un libro. Vamos a escuchar a este cuento mientras miramos el libro juntos. Cuando terminemos, quiero que me vuelvas a contar el cuento en español. ¿Ok? Vamos a mirar el primer libro."*

Play the audio. Turn each page while the speaker listens. Make sure the speaker is looking at the book.

2. Tell the story to the speaker, loosely following the script found at the end of this document. You do not need to memorize the story script, just become familiar enough with it to tell the story.

Directions to the speaker (English sample):

Say *"Here is a book. I am going to tell you this story while we look at the book together. When we finish, I want you to tell the story back to me in English. Ok? Let's look at the book."*

Directions to the speaker (Spanish sample):

Say "Aquí tengo un libro. Te voy a contar este cuento mientras miramos el libro juntos. Cuando terminemos, quiero que me vuelvas a contar el cuento en español. ¿Ok? Vamos a mirar el primer libro."

Tell the story to the speaker. Turn each page while the student listens. Make sure the speaker is looking at the book.

- Unique Story Task:

Directions to the speaker (English sample):

Examiner: Here is a book that doesn't have any words. We are going to look at the pictures in this book together. When we finish, I want you to tell the story to me in English. Ok? Let's look at the book.

Directions to the speaker (Spanish sample):

Examiner: Aquí tengo un libro que no tiene palabras. Vamos a mirar las fotos en este libro. Cuando terminemos, quiero que me cuenta el cuento en español. ¿Ok? Vamos a mirar el primer libro.

You control the book while you silently look at each page together.

- Story Retell and Unique Story Tasks:

Instruct the speaker to tell the story in the target language.

Leave the book with the speaker and move away – either at an angle facing the speaker or across the table. Moving away from the speaker helps promote language and minimize pointing. Turn on the recording device.

Directions to the speaker (English sample):

Examiner: Okay, now I would like you to tell me the story.

Directions to the speaker (Spanish sample):

Examiner: Ahora, cuéntame lo que pasó en este cuento.

Refer to the following section for a list of prompts that may be used while the speaker tells the story. Remember, all prompts should be in the target language.

After the speaker finishes telling the story, turn off the recorder and thank the speaker for telling his/her story.

Repeat these steps to elicit the sample in the other language. You may elicit the second language sample immediately after the first, or you may prefer to wait several weeks in between.

Examiner's Role

The role of the examiner is to let the speaker do most, if not all, of the talking.

In an in-person session, move slightly away from the speaker, turning so that eye contact is easy. The

speaker should be in charge of page turning while telling his/her story. Provide assistance if the speaker has trouble properly turning pages. Moving away from the speaker promotes language and minimizes pointing.

Be an active listener. Use non-verbal prompts, such as nodding and smiling, to promote continued talking. Use minimal open-ended prompts (in the target language) as necessary. Open-ended prompts *do not* provide the student with answers or vocabulary. They *do* encourage the student to try or they let the student know it is ok to move on if needed. Avoid asking yes/no or specific WH questions.

Suggested verbal prompts:

Tell me more.

Just do your best.

Tell me about that.

You're doing great.

Tell me what you can.

That sounds interesting.

What else?

Keep going.

Mhm . Uhhuh.

Dime más.

Haz lo mejor que puedas.

Dime sobre eso/esa.

Estás haciendolo muy bien.

Dime lo que puedas.

Eso/Esa suena interesante.

¿Qué más?

Siguele. Dale.

What if the speaker code switches? Direct the speaker to use the target language with minimal interruption of his/her story. If the speaker occasionally uses a word in the non-target language, you should ignore it. However, if the speaker uses a lot of words or phrases in the non-target language, prompt the speaker (in the target language) to tell the story in English/Spanish.

Comprehension Questions (optional)

Following the speaker's retell, you have the option of evaluating his/her understanding of the story by asking a series of comprehension questions. A description of the comprehension questions can be found on the SALT website at <https://www.saltsoftware.com/products/elicitation-materials/comp-questions>. The database transcripts were not scored for comprehension.

References

- Kim, Y. S. G. (2016). Do Live Versus Audio-Recorded Narrative Stimuli Influence Young Children's Narrative Comprehension and Retell Quality?, *Language, Speech, and Hearing Services in Schools*, 47(1), 77-86.
- Manning, B., Harpole, A., Harriott, E., Postolowicz, K., & Norton, E. (2020). Taking Language Samples Home: Feasibility, Reliability, and Validity of Child Language Samples Conducted Remotely with Video Chat Versus In-Person.
- Mayer, M. (1974). *Frog Goes to Dinner*, New York, NY: Dial Press.
- Mayer, M. (1973). *Frog On His Own*, New York, NY: Dial Press.
- Mayer, M. (1969). *Frog, Where Are You?*, New York, NY: Dial Press.
- Mayer, M. & Mayer, M. (1975). *One Frog Too Many*, New York, NY: Dial Press.

English script for *Frog, Where Are You?* by Mercer Mayer (1969)

Page	Script
1	There once was a boy who had a dog and a pet frog. He kept the frog in a large jar in his bedroom.
2 – 3	One night while he and his dog were sleeping, the frog climbed out of the jar. He jumped out of an open window. When the boy and the dog woke up the next morning, they saw that the jar was empty.
4 – 5	The boy looked everywhere for the frog. The dog looked for the frog too. When the dog tried to look in the jar, he got his head stuck. The boy called out the open window, “Frog, where are you?” The dog leaned out the window with the jar still stuck on his head.
6 – 7	The jar was so heavy that the dog fell out of the window headfirst! The boy picked up the dog to make sure he was ok. The dog wasn’t hurt but the jar was smashed.
8 - 9	The boy and the dog looked outside for the frog. The boy called for the frog.
10 – 11	He called down a hole in the ground while the dog barked at some bees in a beehive. A gopher popped out of the hole and bit the boy right on his nose. Meanwhile, the dog was still bothering the bees, jumping up on the tree and barking at them.
12 – 13	The beehive fell down and all of the bees flew out. The bees were angry at the dog for ruining their home. The boy wasn’t paying any attention to the dog. He had noticed a large hole in a tree. So he climbed up the tree and called down the hole.
14 – 15	All of a sudden, an owl swooped out of the hole and knocked the boy to the ground. The dog ran past the boy as fast as he could because the bees were chasing him.
16 – 17	The owl chased the boy all the way to a large rock. The boy climbed up on the rock and called again for his frog. He held onto some branches so he wouldn’t fall.
18 – 19	But the branches weren’t really branches! They were deer antlers. The deer picked up the boy on his head. The deer started running with the boy still on his head. The dog ran along too. They were getting close to a cliff.
20 - 21	The deer stopped suddenly and the boy and the dog fell over the edge of the cliff.
22 – 23	There was a pond below the cliff. They landed with a splash right on top of one another. They heard a familiar sound.
24 – 25	The boy told the dog to be very quiet. They crept up and looked behind a big log.
26 – 27	There they found the boy’s pet frog. He had a mother frog with him. They had some baby frogs and one of them jumped toward the boy.
28 - 29	The baby frog liked the boy and wanted to be his new pet. The boy and the dog were happy to have a new pet frog to take home. As they walked away the boy waved and said “goodbye” to his old frog and his family.

Spanish script for *Frog, Where Are You?* by Mercer Mayer (1969)

Página	Papel
1	Había un niño quien tenía un perro y una rana. El tenía la rana en su cuarto en un jarro grande.
2 - 3	Una noche cuando el niño y su perro estaban durmiendo, la rana se escapó del jarro. La rana se salió por una ventana abierta. Cuando el niño y el perro se despertaron la siguiente mañana, vieron que el jarro estaba vacío.
4 - 5	El niño buscó en todas partes a la rana. Aún adentro de sus botas. El perro también buscó a la rana. Cuando el perro trató de mirar adentro del jarro y no podía sacar la cabeza. El niño empezó a llamar desde la ventana abierta: “Rana, ¿Dónde estás?”. El perro se asomó a la ventana con el jarro todavía en la cabeza.
6 - 7	¡El jarro estaba tan pesado que hizo que el perro se cayera de cabeza por la ventana! El niño fue a ver como estaba el perro. El perro no estaba herido, pero el jarro se rompió.
8 - 9	El niño y el perro buscaron a la rana afuera de la casa. El niño llamó a la rana.
10 - 11	El niño llamaba a la rana en un hoyo que estaba en la tierra, mientras que el perro le ladraba a unas abejas en su panal. Una ardilla salió de su hueco y mordió la nariz del niño por molestarla. Mientras tanto, el perro seguía molestando a las abejas, brincaba hacia el árbol y les ladraba.
12 - 13	El panal de abejas se cayó y las abejas salieron volando. Las abejas estaban enojadas con el perro. El niño no prestó ninguna atención al perro. El vio un hueco grande en un árbol y quería ver si su rana se escondía allí. Así que trepó el árbol y llamó a la rana en el hueco para ver si estaba.
14 - 15	De repente un buho salió del hueco y lanzó al niño al suelo. El buho lo vio fijamente y le dijo que se fuera. El perro pasó al niño corriendo tan rápido como pudo porque las abejas lo perseguían.
16 - 17	El buho persiguió al niño hasta una piedra grande. El niño se encaramó en la piedra y llamó otra vez a la rana. Se agarró a unas ramas para no caerse de la piedra.
18 - 19	¡Pero las ramas no eran ramas reales! Eran los cuernos de un venado. El venado levantó al niño con su cabeza. Y el venado empezó a correr con el niño que estaba todavía en su cabeza. El perro también corrió al lado del venado. Se acercaron a un precipicio.
20 - 21	El venado se paró de pronto y el niño y el perro se cayeron por el precipicio.
22 - 23	Había un estanque debajo del precipicio. Aterrizaron en el estanque uno encima del otro. Oyeron un sonido que conocían.
24 - 25	El niño le dijo al perro que se callara. Los dos se acercaron con cuidado y miraron detrás de un tronco de un árbol.
26 - 27	Allí encontraron a la rana del niño. Había con él una rana mamá también. Ellos tenían algunas ranitas bebés y una de ellas saltó hacia el niño.
28 - 29	La ranita quería mucho al niño y quería ser su nueva mascota. El niño y el perro estaban felices de tener una nueva rana y llevarla a casa. Cuando se iban, el niño dijo adiós a la que fue su rana y también a su familia.

English script for *Frog Goes to Dinner* by Mercer Mayer (1974)

Page	Script
1	A boy was getting dressed in his bedroom. His pet dog, frog and turtle watched as he put on his best clothes.
2 – 3	While the boy was petting the dog, the frog jumped into his coat pocket. The boy didn't know he was there. As the boy left with his family, he waved and said "Goodbye" to his pets. The frog waved goodbye too.
4 – 5	When the boy and his family arrived at a fancy restaurant, the doorman helped them out of the car. The frog peaked out of the boy's pocket but no one noticed him.
6 – 7	The boy and his family sat down at a table in the restaurant. While they were looking at the menus, the frog jumped out of the boy's pocket towards the band.
8 – 9	The frog landed right in the man's saxophone! "Squeak" went the saxophone. The man looked inside the saxophone to see why it made that awful noise.
10 – 11	Then the frog fell out of the horn and landed right on the saxophone player's face! The saxophone player was so surprised that he fell backwards into the drum.
12 – 13	The drummer yelled at the saxophone player, "Look what you did to my drum- it's broken!" While they were arguing, the frog jumped away on a plate of lettuce salad.
14 – 15	The waiter didn't notice the frog. He served the salad to a woman. Just as she was about to take a bite, the frog popped out of the lettuce. The woman was shocked to see the frog.
16 – 17	She screamed and fell back on her chair. The frog was frightened and he jumped away. There was a man at the next table who was having a glass of wine with his wife. The frog landed right in his glass.
18 – 19	The woman complained to the waiter about getting a salad with a frog in it. She was very angry! Meanwhile, when the man went to take a sip of his drink, the frog kissed him right on the nose.
20 – 21	The angry waiter was about to grab the frog who was waving goodbye to the man and his wife.
22 – 23	The waiter, who had caught the frog, was going to throw him out of the restaurant. But the boy saw the waiter carrying his frog and shouted, "Hey, that's my frog!" The boy's mother told him to be quiet.
24 – 25	The boy asked the waiter to give him back his frog. The angry waiter told the boy and his family, "Take your frog and get out of this restaurant at once. Don't you ever bring that frog in here again!"
26 – 27	On the way home the boy's family was angry with him. The frog had ruined their dinner!
28 – 29	When they got home the boy's father scolded him, "You go to your room and stay there!" The dog and the turtle peeked around the corner to see what was going on.
30	When they got in his room, the boy and the frog laughed about everything that had happened at the restaurant. The more they thought about it, the more they laughed.

Spanish script for *Frog Goes to Dinner* by Mercer Mayer (1974)

Página	Papel
1	Un niño se estaba preparando para salir a cenar. Sus mascotas el perro, la tortuga, y la rana lo miraban mientras él se ponía sus mejores ropas. Estaban tristes porque sabían que él iba a salir sin ellos.
2 – 3	Mientras que el niño acariciaba al perro, la rana brincó dentro del bolsillo del niño. El niño no sabía que la rana estaba en su bolsillo. Cuando la familia se iba, el niño les dijo adiós a sus mascotas. La rana también les dijo adiós.
4 – 5	Cuando la familia del niño llegó a un restaurante lujoso, el portero les ayudó a bajar del carro. La rana miró con cuidado desde el bolsillo.
6 – 7	En el restaurante se sentaron en una mesa. Mientras miraban el menú, la rana se escapó del bolsillo del niño y brincó hacia la banda musical.
8 – 9	¡La rana terminó dentro del saxofón! Cuando el músico empezó a tocar su instrumento, el sonido fue horrible. Por eso, él miró dentro de su instrumento para ver que pasaba. Los otros músicos estaban muy confundidos como él.
10 – 11	¡Luego la rana le cayó y aterrizó en la cara del músico! Y entonces el músico sorprendido, se cayó hacia atrás y cayó dentro del tambor.
12 – 13	El tocador del tambor gritó al otro músico: “¡Mira lo que pasó – mi tambor está roto! ahora, ¿Con qué voy a tocar?” Mientras ellos discutían, la rana brincó y terminó en la ensalada.
14 – 15	El mesero no se dio cuenta que la rana estaba en la ensalada. El mesero le sirvió la ensalada a una señora. Cuando empezaba a comerla, la rana salió por debajo de la lechuga. La señora estaba aterrorizada al ver la rana.
16 – 17	Ella gritó y se cayó para atrás. La rana estaba asustada y salió brincando. En la próxima mesa había un hombre y su esposa tomando una copa de vino. La rana se cayó en la copa del señor.
18 – 19	La mujer se quejó de que había encontrado una rana en su ensalada. ¡Ella estaba muy enojada! Mientras tanto, cuando el señor fue a tomar la copa, la rana salió y le dio un beso en la nariz.
20 – 21	El mesero enojado estuvo a punto de capturar la rana. El hombre y su esposa se fueron del restaurante porque no se sentían bien para comer con animales en la comida.
22 – 23	El mesero cuando capturó la rana, la cargó hasta la puerta para botarla. Pero el niño vio al camarero con su rana y le gritó: “¡Esa es mi rana, no la botes!” Su mamá le dijo al niño que se callara.
24 – 25	El niño estaba preocupado de que el mesero iba a botar su rana en la calle. Entonces el niño le dijo al mesero que le diera su rana. El mesero les dijo al niño y su familia: “Toma tu rana y salgan de este restaurante inmediatamente. ¡No permitimos animales ni gente que los traen en este restaurante!”
26 – 27	Durante el camino de vuelta, la familia del niño estaba enojada. ¡La rana arruinó la cena!
28 – 29	Cuando llegaron a la casa el padre del niño lo regañó y le dijo: “Vete a tu cuarto y quédate allí”. El perro y la tortuga miraron de escondidas desde el rincón para ver que pasó.
30	Cuando llegaron a su cuarto, el niño y su rana se rieron de todo lo que había pasado en el restaurante. Mientras más pensaban en todo lo que había pasado, más reían.

English script for *Frog On His Own* by Mercer Mayer (1973)

Page	Script
1	One day a boy walked to the park with his dog, carrying his pet frog and turtle in a bucket.
2 – 3	After they got into the park, the frog jumped out of the bucket. The frog waved goodbye to his friends as they walked away. He wanted to explore the park on his own.
4 – 5	The frog came upon some flowers. He was watching them very closely. All of a sudden, he snapped his tongue high into the flowers.
6 – 7	He caught a big, tasty bug for his lunch. He put the bug in his mouth and realized that was a big mistake.
8 – 9	The bug was a bumblebee. It stung the frog on his tongue. After a while, the frog noticed a man and woman who were having a picnic.
10 – 11	The woman reached into her picnic basket. At the same time, the frog crawled into the basket. As the woman was digging around for something to eat, she felt something strange.
12 – 13	She quickly pulled her hand out of the basket to find the frog hanging on her arm. The frog quickly jumped away from the couple. The woman threw a coffee cup at him. She screamed, “Don’t you ever come back you nasty little frog!”
14 – 15	The frog hopped over to a small pond where he noticed a little boy sailing his toy boat. The boy’s mother was on a bench reading.
16 – 17	The curious frog wondered if he could sail in the boat. He leapt though the air - and landed, splat, on top of the sailboat.
18 – 19	The frog was too big for the sailboat and sunk it. The little boy started crying and his mother came to pull the sunken sailboat out of the water. The frog swam across the pond and crawled out on the other side. He saw a woman on a bench rocking a baby stroller. Her cat was napping by the stroller.
20 – 21	The curious frog wanted to know what was inside the stroller. He took a giant leap toward it. The frog landed on the baby’s lap. The baby sat up and looked at the frog. It was time for the baby to have a bottle and the mom was getting it ready.
22 – 23	While the mom read her magazine, she held out the bottle for her baby. The frog was going to drink the bottle while the mom wasn’t looking. The baby started to cry because he wanted his bottle. The cat climbed up the stroller to try to catch the frog. The mother realized what was happening and was shocked.
24 – 25	She picked up her baby while the cat chased after the frog.
26 – 27	The frog leapt away as fast as he could but the cat caught him by the leg. The cat wrestled the frog to the ground. The frog was very frightened.
28 – 29	Luckily, along came the boy with his dog and turtle. The dog barked at the cat and the boy yelled, “Hey, get away from my frog!” This scared the cat who ran away as fast as he could.
30	The boy picked up his frog and started to walk home. The frog lay in the boy’s arms, very tired from all of his adventures. He was happy to be back with his friends.

Spanish script for *Frog On His Own* by Mercer Mayer (1973)

Página	Papel
1	Un día un niño caminó en el parque con su perro, llevando a su rana y la tortuga en una cubeta.
2 – 3	Después de llegar al parque, la rana saltó de la cubeta. La rana le dijo adiós a sus amigos mientras ellos se iban. Ella quería explorar el parque sólo.
4 – 5	La rana encontró unas flores. Las miró de cerca. De repente, metió la lengua en las flores.
6 – 7	Capturó un insecto grande y sabroso para el almuerzo. Puso el insecto en su boca y se dio cuenta de que era un gran error.
8 – 9	El insecto era una abeja; y le picó la lengua de la rana. Y por eso a la pobre rana le dolía su lengua. Después de un rato, la rana vió a un hombre y una mujer quienes estaban de día de campo.
10 – 11	La mujer metió la mano en la canasta de comida. Ella no sabía que al mismo tiempo la rana entró en la canasta. Cuando la mujer intentó encontrar algo para comer, sintió algo extraño.
12 – 13	Ella rápidamente sacó su mano de la canasta y descubrió a la rana colgando de su brazo. El hombre se asustó tanto que hasta tiró su taza de café y se le cayeron sus lentes. La rana se fue corriendo alejándose de la pareja. La mujer arrojó una taza de café a la rana y le gritó: “¡Odiosa ranita nunca regreses aquí!”. El hombre estaba en el césped riéndose histéricamente.
14 - 15	La rana brincó hasta un pequeño estanque donde vio a un niño jugando con su barco de vela.
16 – 17	La rana curiosa quería saber si podía navegar en el barco. Saltó... y terminó, salpicado, encima del barco de vela.
18 – 19	La rana era demasiado grande y el barco de vela se hundió. El niño empezó a llorar y su madre vino a sacar al barco hundido fuera del agua. La rana cruzó nadando el pequeño estanque y salió al otro lado. Vio a otra mujer sentada en un banco meciendo el cochecito de un bebé. Su gato estaba dormido al lado del cochecito.
20 – 21	La rana curiosa quería saber que había en el cochecito. Así que saltó fuertemente hacia el coche. La rana aterrizó en las rodillas del bebé y el bebé se sentó y miró a la rana. Ya era hora de que el bebé comiera, así que mientras la madre leía su revista le dio el tetero al bebé.
22 – 23	Y como la madre estaba entretenida leyendo, la rana trató de tomarse la leche del bebé. El bebé empezó a llorar porque quería su tetero. El gato molesto subió en el cochecito para tratar de capturar a la rana. La madre se dio cuenta de lo que estaba pasando y se asustó mucho.
24 - 25	Ella levantó a su bebé mientras que el gato perseguía a la rana.
26 – 27	La rana salió saltando lo más rápido posible, pero el gato la atrapó por la pierna. El gato luchó con la rana y ella terminó en el suelo. La rana tenía mucho miedo.
28 - 29	Afortunadamente, llegó el niño con su perro y su tortuga. El perro le ladró al gato y el niño gritó: “¡Deja de molestar a mi rana!”. Esto asustó al gato y lo hizo salir corriendo.
30	El niño levantó a su rana y empezó el camino de regreso a la casa. La rana se acostó en los brazos del niño, muy cansada por todas sus aventuras. Estaba contenta de estar con sus amigos de nuevo.

English script for *One Frog Too Many* by Mercer and Marianna Mayer (1975)

Page	Script
1	There was a boy who had three pets, a dog, a frog and a turtle. One day he saw a large box with a bow on it. The card on the box said that the present was for him.
2 – 3	So he opened the box and was very excited when he saw what was in it. Inside the box was a little frog. The boy, the dog and the turtle liked the little frog. But the big frog didn't like the little frog.
4 – 5	The boy set the little frog down next to his pets and said, "This is my new little frog." The big frog said, "I don't like you."
6 – 7	Then the big frog bit the little frog's leg. The little frog cried, "Ouch, ouch!" The boy picked up the little frog and scolded the big frog, "That was a very mean thing to do frog."
8 – 9	The boy's pets followed him outside to play. The two frogs rode together on the turtle's back but the big frog still didn't like the little frog. The boy, who was dressed up like a pirate, led the way.
10 – 11	The big frog thought nobody was looking so he kicked the little frog off of the turtle's back. But when the others heard the little frog crying, they knew what had happened. They were all angry at the big frog for being mean to the little frog again.
12 – 13	The boy led them all to a pond where he had a raft. He wouldn't let the big frog get on the raft with them. The big frog didn't like being told that he couldn't come with them.
14 – 15	So he ignored what the boy told him and jumped on the raft just as it was leaving the shore. The little frog was the only one who noticed that the big frog had jumped on the raft. The big frog glared at the little frog.
16 – 17	Then he kicked the little frog off the raft. And stuck out his tongue at him.
18 – 19	The big frog was happy with himself. Now he was the only frog- just the way it used to be. The turtle tapped the boy on the leg to get his attention. When the boy turned around, he was shocked at what he saw. "How did the big frog get there? And where was the little frog?"
20 – 21	The boy and his pets got off the raft and searched for the little frog. They looked all around the pond.
22 – 23	They couldn't find the little frog anywhere. The boy was so sad he began to cry as he walked home. The frog felt sorry for what he had done.
24 – 25	When the boy got home he went to his room and cried. His pets were sad too. Then they heard a noise out the window. It sounded like a frog.
26 – 27	All of a sudden the little frog jumped through the open window. Everyone was excited to see the little frog. The little frog landed right on the big frog's head and laughed.
28	The big frog decided to be nice to the little frog from now on. Everyone was happy.

Spanish script for *One Frog Too Many* by Mercer and Marianna Mayer (1975)

Página	Papel
1	Había un niño quien tenía tres animales; un perro, una rana y una tortuga. Un día vio una caja envuelta con papel de regalo. La tarjeta en la caja decía que era un regalo para él.
2 – 3	Abrió la caja y se emocionó cuando vio lo que había adentro. Había una ranita. Al niño, al perro y a la tortuga les gustó la ranita. Pero a la otra rana grande no le gustó. La rana grande quería seguir siendo la rana favorita del niño. Se puso celosa.
4 – 5	El niño puso la ranita al lado de sus otras mascotas y dijo: “Esta es mi nueva ranita, ¡dile hola a todos!” La rana grande le dijo: “Yo soy la rana mas vieja y grande. ¡No me agradas!”
6 – 7	Entonces la rana le mordió la pata a la ranita. La ranita lloró... “¡Ay, ay!” El niño no creía que la rana grande le hiciera algo así a la pobre ranita chiquita. El niño levantó a la ranita y regañó a la rana grande: “Fue muy malo lo que hiciste. ¡Tienes que tratar bien a la ranita nueva!”
8 – 9	Las mascotas del niño lo siguieron afuera para jugar. Las dos ranas se montaron en la tortuga, pero a la rana grande todavía no le agradaba la ranita. El niño, disfrazado como pirata, iba de primero en la fila.
10 – 11	Mientras tanto, la rana grande pateó a la ranita y la tumbó de la tortuga. Pero cuando los demás oyeron a la ranita llorando, se dieron cuenta de lo que había pasado. Todos estaban enojados con la rana por ser tan mala con la ranita.
12 – 13	El niño llegó con todos sus animales a un estanque donde había una balsa. El niño no dejó entrar en la balsa a la rana grande. Pero a ella no le gustó que la dejaran sola en la orilla del estanque.
14 – 15	Así que la ranita no le hizo caso al niño y brincó a la balsa. Solamente la ranita se dio cuenta de que la rana había brincado en la balsa. La rana miró a la ranita con una cara muy brava.
16 – 17	Entonces la rana grande pateó a la ranita y la tumbó de la balsa. La rana le sacó la lengua a la ranita y pensó: “Eso le enseñará”.
18 – 19	La rana grande estaba contenta. Ahora era la única rana del niño – como solía ser antes. Pero, la tortuga le tocó la pierna al niño para avisarle lo que había pasado. Cuando el niño se volteó, se asombró de lo que vio. “¿Cómo llegó la rana grande hasta la balsa? ¿y dónde está la ranita?”
20 – 21	El niño y sus mascotas se bajaron de la balsa y buscaron a la ranita. Ellos miraron por todas partes y dijeron: “Ranita, ¿Dónde estás?”
22 – 23	Pero ellos no pudieron encontrarla. Durante el camino de vuelta, el niño estaba triste y empezó a llorar. La rana grande se arrepintió por lo que había hecho.
24 – 25	Cuando llegó a su casa, el niño se acostó en su cama y se puso a llorar. Sus mascotas también estaban tristes. Hasta la rana grande estaba triste. Entonces, oyeron algo fuera de la ventana. Era el sonido de una ranita.
26 – 27	De repente, la ranita brincó por la ventana abierta. Todos estaban muy emocionados de ver a la ranita. Ellos creían que no la verían de nuevo, pero allí estaba. La ranita brincó a la cabeza de la rana grande y se rió.
28	La rana grande decidió ser buena con la ranita desde ahora en adelante. Todos estaban muy felices.



Summary of SALT Transcription Conventions

1. Transcript Format. Each entry begins with one of the following symbols. If an entry is longer than one line, continue it on the next line.

- \$ Identifies the speakers in the transcript; always the first line of the transcript. Example: \$ Child, Examiner
- C Child/Client utterance. The actual character used depends on the \$ speaker line.
- E Examiner utterance. The actual character used depends on the \$ speaker line.
- + Header information such as name, age, context, codes used in sample (e.g., + CA: 5;7). Also used for inserting test scores.
- Time marker. Example of two-minute marker: - 2:00
- : Pause between utterances of different speakers. Example of five-second pause: : :05 or :05
- ; Pause between utterances of same speaker. Example of three-second pause: ; :03 or ;03
- = Comment line. This information is used for transcriber comments and is not analyzed in any way.

2. End of Utterance Punctuation. Every utterance must end with one of these six punctuation symbols.

- . Statement, comment. Do not use a period for abbreviations.
- ! Surprise, exclamation.
- ? Question.
- ~ Intonation prompt.
Example: E And then you have to~
- ^ Interrupted utterance. The speaker is interrupted and does not complete the thought/utterance.
- > Abandoned utterance. The speaker does not complete the thought/utterance but has not been interrupted.

3. { } Comments within an utterance.

- Example: C Lookit {C points to box}.
- Nonverbal utterances with communicative intent are placed in braces. Example: C {nods}.

4. Unintelligible Segments. X is used to mark unintelligible sections of an utterance. Use X for an unintelligible word, XX for an unintelligible segment of unspecified length, and XXX for an unintelligible utterance.

- Example 1: C They went X X park. Example 2: C He XX today. Example 3: C XXX.

5. Bound Morphemes. Words which contain a slash "/" indicate that the word is inflected or contracted in a regular manner. The root word is entered in its base spelling followed by a slash "/" and then the bound morpheme.

English and Spanish

- /S Plural. Examples: kitten/s, baby/s, rana/s, flor/s.
Do not mark words that end in "s" but represent one entity (e.g., pants, binoculars).
Do not mark irregular forms (e.g., mice, geese, deer) or when the sound of the root changes (e.g., leaves, wolves).

English only

- /Z Possessive inflection. Examples: dad/z, Mary/z
Do not mark any possessive pronouns (e.g., mine, his, hers, ours, yours, its, theirs).
- /S/Z Plural and Possessive. Example: baby/s/z
- /3S 3rd Person Singular verb form. Examples: go/3s, tell/3s, try/3s
Do not mark irregular forms (e.g., has, was) or when the sound of the root changes (e.g., do→does, say→says).
- /ED Past tense. Examples: love/ed, die/ed
Do not mark irregular forms (e.g., did, grew, had, sank) or predicate adjectives (e.g., was tired, are bored, got fixed).
Transcription hint: regular past tense /ED verbs never follow a BE or GET verb.
- /EN Past participle. Examples: take/en, eat/en, prove/en
Do not mark irregular forms (e.g., gotten, spoken, seen, been) or adjectives (e.g., was eaten, were taken). Also, do not slash verbs when the sound of the root changes (e.g., write→written).
Transcription hint: Regular form: present tense + EN as separate syllable. /EN verbs always follow HAVE, HAS, or HAD.
- /ING Progressive verb form. Examples: go/ing, run/ing, bike/ing
Do not mark the gerund use of the verb form (e.g., went swimming, reading is fun).
- /N'T, /'T Negative contractions. Examples: can/'t, does/n't
Do not mark irregular forms (e.g., won't) or when the sound of the root changes (e.g., do→don't).
- /'LL, /'M, /'D, /'RE, /'S, /'VE Contracted → WILL, AM, WOULD, ARE, IS, HAVE
Examples: I/'ll, I/'m, I/'d, we/'re, he/'s, we/'ve
- /H'S, /H'D, /D'S, /D'D, /'US Contracted → HAS, HAD, DOES, DID, US
Examples: He/h's been sick. We/h'd better go. What/d's he do for a living? Why/d'd the boy look there? Let/'us go.

6. Bound Pronominal Clitics (Spanish only). Pronominal clitics may be either bound or unbound. When bound, they are preceded by a plus sign. Examples: gritando+le, deja+lo, dá+me+lo

7. Mazes. Filled pauses, false starts, repetitions, and reformulations.

() Surrounds the words/part-words that fall into these categories. Combine adjacent mazes.

Example: C And (then um) then (h*) he left.

8. Omissions. Partial words, omitted words, omitted bound morphemes, and omitted pronominal clitics are denoted by an asterisk (*).

* Following one or more letters indicates that a word was started but left unfinished.

Example: C I (w* w*) want it.

* Preceding a word indicates that an obligatory word was omitted.

Example: C Give it *to me.

/* Following a slash the * is followed by the obligatory bound morpheme which was omitted.

Example: C The car go/*3s fast.

+* Following a plus sign the * is followed by the obligatory Spanish pronominal clitic which was omitted.

Example: C Él está gritando+*le a la rana.

9. Overlapping Speech. When two speakers are speaking at the same time, the words which occur at the same time are surrounded by angle brackets < >. Example: C Can I have that <one>?

E <Uhhuh>.

When one speaker interjects in the middle of another speaker's utterance, use empty angle brackets to indicate the position of the interjection. Example: C I want you to do it <> for me.

E <Ok>.

10. Linked words. The underscore “_” is used to link multiple words so they are treated as a single word. Uses include:

Titles of movies and books.

Examples: Beauty_and_the_Beast, Frog_Where_Are_You

Proper names.

Examples: Mrs_Jones, Sr_Rojas

Words or phrases repeated multiple times.

Example: He ran ran_ran|ran as fast as he could.

11. Root identification. The vertical bar “|” is used to identify the root word.

Overgeneralization errors.

Example: C He goed|go[EO:went] to the park by himself.

Linked words repeated for emphasis.

Examples: C The boy ran very_very|very fast. C Dijeron rana rana_rana|rana dónde estás.

Spanish only: Inflected word forms.

Example: C Había|haber una vez un niño que tenía|tener una rana.

Spanish only: Diminutives.

Example: C El perrito|perro tumbó|tumbar las abeja/s.

English only: Root form of irregular verbs.

Note that the root forms of irregular verbs are not identified in any of the SALT reference databases.

Example: C The bird flew|fly/ed away.

12. Sound Effects and Idiosyncratic Forms %. The percent sign is used to identify sound effects which are essential to the meaning or structure of the utterance. Non-essential sound effects are entered as comments. Strings of the same sound are linked together.

Example 1: C The dog went %woof_woof.

Example 2: C The dog barked {woof woof}.

The percent sign is also used to identify idiosyncratic forms. These are immature productions which are consistent in reference to an object, person, or situation.

Example 1: C See %vroom {car}.

Example 2: C My %coopa {cookie}.

13. Spelling Conventions.

- Abbreviations: Periods are not legal word characters. Abbreviated words should either be written out or left as an abbreviation but without the period. Examples: Mr, Mister, Mrs, Dr, Sra, Señora
- Filled pause words: AH, EH, ER, HM, HMM, UH, UM, MM, and any word with the code [FP]
- Yes words: OK, AHA, MHM, UHHUH (*English & Spanish*)
YEAH, YEP, YES (*English only*)
Sí (*Spanish only*)
- No words: NO, AHAH, MHMH, UHUH (*English & Spanish*)
NAH, NOPE (*English only*)
- Hyphenated words follow standard spelling conventions. Examples: mother-in-law, pick-me-up, good-hearted, twenty-five
- Numbers (*examples*): twenty-one or 21; dieci-siete or 17 (*choose a format and be consistent*)
- Clock time: Do *not* use colons when typing clock time because it will be interpreted as a pause. Type out the words connected with an underscore character. Examples: eight_thirty, la_una_treinta
- Counting and “spelled” words use the underscore character to connect the numbers or letters.
Examples: 1_2_3_4_5, C_A_T
- Shortened words: Either use the vertical bar to identify the word or use the full word. In the following example, the speaker said “cuz”. No matter which format you use, the word root in this example is analyzed as “because”.
Example: C He was sad cuz|because they left.
C He was sad because they left.
- English concatenatives:

BETCHA (<i>bet you</i>)	LIKETA (<i>like to</i>)	OUTTA (<i>out of</i>)	USETA (<i>used to</i>)
COULDA (<i>could have</i>)	LOOKIT (<i>look at it</i>)	SHOULDA (<i>should have</i>)	WANNA (<i>want to</i>)
GONNA (<i>going to</i>)	MUSTA (<i>must have</i>)	SPOSTA (<i>supposed to</i>)	WHATCHA (<i>what are you</i>)
GOTTA (<i>got to</i>)	OUGHTA (<i>ought to</i>)	TRYNTA (<i>trying to</i>)	WOULDA (<i>would have</i>)
HAFTA (<i>have to</i>)			
- Sounds with specific meanings:
HMM, HUH (question or affirmation), IDK (intoned *I don't know*), UHOH (something is wrong), SHH or %SHH (be quiet), PSST, %PSST (to get someone's attention)
- Other English spellings:
AIN'T, ALOT, ATTA, NOONE, OH, OOH, OOP, OOPS, OOPSY
- Reflexive vs Non-reflexive pronouns (*Spanish only*):
The following pronouns can be used both reflexively and non-reflexively: ME, TE, SE, OS, NOS. Attach the code [X] when used reflexively. Examples: C El niño se[X] fue con el perro.
C El perro me ayudó a conseguir la rana.

14. [] Codes. Codes are used to mark words or utterances. Codes are placed in brackets [] and cannot contain blank spaces. Codes used to mark words are inserted at the end of a word with no spaces between the code and the word. Codes used to mark utterances are inserted at the end of the utterance or at the position of the feature you wish to mark, separated by at least one space from adjacent word(s).

a) Codes used to mark errors in the reference database samples:

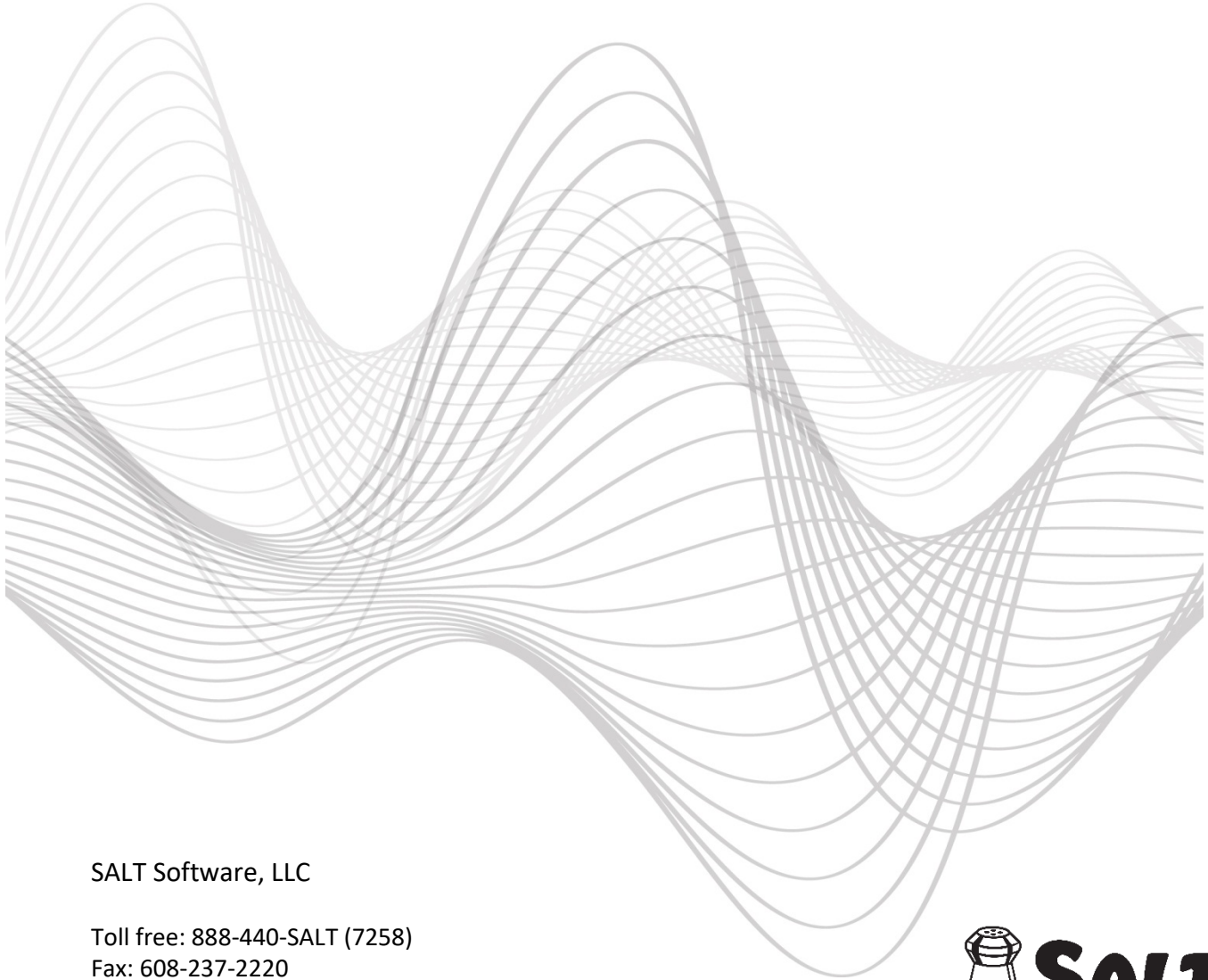
[EO: __] used to mark overgeneralization errors.	C He falled fall[EO:fell].
[EP: __] used to mark pronoun errors.	C And them[EP:they] found the frog.
[EW: __] used to mark other word-level errors.	C He were[EW:was] look/ing.
[EW] used to mark extraneous words.	C And then the boy is a[EW] sleep/ing.
[EU] used to mark utterance-level errors.	C And they came to stop/ed [EU].
[FP] used to mark non-standard filled pause words.	C The dog (um like[FP]) fell down.

b) Other codes used in the Bilingual Spanish/English reference database samples:

[F] used to mark fragments due to utterance segmentation in modified communication units.	C The gopher look/ed out of the hole. C and bit the boy [F].
[CS] used to mark code-switched words.	C The dog fell from la[CS] ventana[CS].
[WO] used to mark utterances with non-standard word order.	C And then fell down the dog and the boy [WO].
[I] used to mark vocabulary provided by the examiner (imitated word).	C And then the :05 <> owl[I] scare/ed him. E <Owl>.
[X] used to mark Spanish reflexive pronouns.	C El niño se[X] fue con el perro.

TRANSCRIPTION CONVENTIONS

Standard SALT Conventions



SALT Software, LLC

Toll free: 888-440-SALT (7258)

Fax: 608-237-2220

support@saltsoftware.com

www.saltsoftware.com



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Standard SALT Conventions

1. Resources

There is a lot of flexibility in the format of SALT transcripts. If you plan to compare your language samples to samples selected from the SALT reference databases, however, it is important that you use the same transcription conventions as were used with these database samples. This user guide is provided as a reference for English transcription. The [SALT web site](#), however, is the best place to learn the SALT transcription conventions. There are courses designed to help you learn the conventions with clear explanations, lots of examples, and opportunities for you to apply what you learn. Select **Help → Web Training**. This takes you to training section on the SALT web site. The transcription conventions are also available in the help system built into the software. When you are in the SALT editor, just select the context help (press the function key F1) for a list of the transcription conventions. Another resource is the **Help → Resources → Transcription Conventions → Summary of Transcription Conventions** documentation which contains a summary of the conventions and Appendix A which gives the rationale behind which bound morphemes are marked.

What skills are needed to transcribe the samples?

1. Transcribers do not need to be experienced clinicians.
2. Transcribers should be familiar with the elicitation protocol.
3. Transcribers should be fluent speakers in the language of the sample in order to pick up subtleties in the recordings that non-fluent speakers may miss.
4. Transcribers should be familiar with the SALT transcript-entry conventions.

Note: You may find it expedient to divide the transcription task into two components: 1) a transcriber, fluent in the language of the sample, glosses the speech verbatim; and 2) a transcriber, familiar with the SALT transcript-entry conventions, edits the glossed text into a SALT transcript.

What materials are needed to transcribe the samples?

1. A transcription device for controlled audio playback is optimal. There are a growing number of options available for controlling digitized sound files. Visit saltsoftware.com/resources/linkstoequipment for suggestions.
2. The SALT editor for typing in the language sample and checking it for transcription errors.

2. Begin a New Transcript

To begin a new transcript, select **File → New** and you are presented with a header dialog box like the one shown here. You enter the appropriate information and it is used to format the speaker line, the information lines, and the initial timing line at the beginning of the transcript. You must identify the speakers in the transcript but the rest of the information is optional. *Refer to the Help Button in this dialogue box for detailed descriptions.*

The screenshot shows the 'New Transcript - Header Information' dialog box. It contains the following fields and options:

- Target Speaker:** Radio buttons for Child (selected), Client, and Other.
- Other Speakers:** Checkboxes for Examiner (checked), Parent, and Other.
- Target Speaker Information:**
 - Participant Id: [Text field]
 - Name or initials: [Text field]
 - Gender: Radio buttons for Female, Male.
 - Date of birth: [Text field] with format mn/dd/yy or mn/dd/yyyy.
 - Date of sample: [Text field] with format yy:mm.
 - Current age: [Text field] with format yy:mm and a 'Calc CA' button.
 - Grade: [Text field] with options P, K, 0, 1, 2, 3,
 - Ethnicity: [Text field]
 - Parent education: [Text field] with options 0 - 20.
- Examiner's name:** [Text field]
- Transcriber's name:** [Text field]
- Location:** [Text field]
- Collection point:** [Text field] with options 1, 2, 3,
- Sampling Context:** Radio buttons for Con, Nar, Expo, Pers, and Other.
- Subgroup/Story:** Radio buttons for Play, FWAY, FGD, FOHO, OFTM, PGHW, APNF, DDS, SSS, TNL, TNL-2, AGL, BUS, NZPN, ENNI, and Other.
- Target Language:** Radio buttons for English (selected), Spanish, French, and Other.
- Bilingual:** Radio buttons for SE, FE, and Other.
- Other Header Information:** [Text field]
- Initial clock time:** [Text field] with value 0:00 and format HH:MM or HH:MM:SS.
- Database for comparison:** [Text field] with a 'Browse' button.

What parts of the language sample should be transcribed?

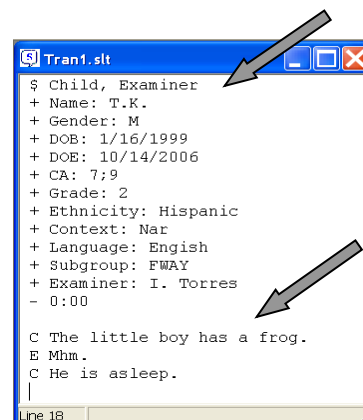
Often the beginning of the language sample contains instructions from the examiner or a short conversation with the target speaker designed to put the speaker at ease. Unless this is part of the elicitation protocol, do not transcribe this text. Begin transcription at the point where the target speaker begins the elicitation task and then transcribe everything which was said. This includes all mazes (filled pauses, repetitions or reformulations), requests for vocabulary, and examiner prompts.

3. Transcript Format

a. Identify the Speakers

- General Information

The speakers in the transcript are defined on the \$ speaker line at the beginning of the transcript. The first character of each name must be a letter or number and is used to identify that speaker. This is called the "speaker id". Each speaker id must be unique since it is used to differentiate between the speakers. The speaker names are used to label the analyses. If the speaker name exceeds nine characters, only the first nine characters are used for labeling. In the example shown here, "C" is the speaker id for the child and "E" is the speaker id for the examiner.



There can be any number of speakers in the transcript but only two speaker groups can be analyzed at one time. Commas are used to separate the speaker groups.

- Transcripts with Two Speakers

Place a comma between the two names. You may leave a space between the comma and the second speaker's name. The utterances of the first and second speaker are differentiated by a unique letter entered at the beginning of each utterance which corresponds to the first letter of each entry on the \$ label line.

Example of two speaker transcript (analyses will be labeled as BILLY and JANE):

```
$ Billy, Jane
J Kittycat.
B I see you.
B You big kitty.
```

The first name entered on the \$ label line is referred to as "1st Speaker" and the second name is the "2nd Speaker". In the above example, Billy is the 1st Speaker and Jane is the 2nd Speaker. Note that the first speaker does not refer to the first person to speak in the transcript. It is usually assigned to the speaker who is the primary focus of the transcript.

- Transcripts with One Speaker

If you are entering the utterances of a single speaker, enter a \$ followed by the single speaker's name, before the first utterance of your transcript. If you just enter child utterances, for example,

the SALT analyses will provide all data for the first speaker and print out "zeros" for the absent speaker.

Example of single speaker line:

\$ Billy

- Transcripts with More Than Two Speakers

When entering the utterances of more than two speakers, you need to decide how you would like to have the SALT program group them for analysis because only produces analyses for the "1st" and "2nd" speaker groups during any given analyses run. The \$ label line may contain from one to three speaker groups, but each group may consist of an unlimited number of speakers occurring within the transcript. Each and every speaker must be represented in one and only one group in the transcript. Utterances comprising the 1st speaker group are summarized under the "1st Speaker" in the analyses; utterances comprising the 2nd speaker group are summarized under the "2nd Speaker" in the analyses; and utterances comprising the 3rd speaker group are not included in the analyses. (To obtain an analysis of the "3rd" speaker, you would simply reposition the groups on the \$ label line and run an additional set of analyses.) Within a speaker group, each speaker group identifier (the first alphabetic character) must be separated by a space. The first alphabet letter of each speaker group, therefore, must be unique as it is used to differentiate that speaker (or group of speakers) from all others. Speaker groups are then separated with commas. Following are examples of various ways of specifying the multiple speaker groups. The participants in this conversation are defined as follows:

Achild = first child

Bchild = second child

Mother = mother

Father = father

Examr = examiner

Examples of possible combinations:

\$ Achild Bchild, Mother Father, Examr

In this first example, the 1st speaker is the two children (Achild and Bchild) combined; 2nd speaker is the Mother and Father combined; and the 3rd speaker is the Examiner. The utterances of the Examiner will be ignored in the analyses with the exception of the turn taking counts.

\$ Achild, Bchild, Mother Father Examr

With this speaker line, the 1st speaker is Achild and the 2nd speaker is Bchild. The utterances of the other three speakers (Mother, Father, and Examiner) will be ignored in the analyses with the exception of speaker turn counts..

\$ Achild Bchild, Mother Father Examr

In this last example, the first speaker is Achild and Bchild combined; and the second speaker is Mother, Father, and Examiner combined.

b. *Identification Information*

Follow the \$ speaker line with the transcript identification lines. These lines begin with a plus sign (+) and are used to provide identification information at the beginning of your transcript. This information may include the target language, the speaker's name and age, participant number, date of transcript, description of codes, etc. Enter such information on lines that begin with a plus sign (+) in the first

column. You may enter as many information (+) lines as you like at any point in your transcript. The SALT program ignores these lines for analysis. They are included for identification or commenting purposes only. However, the Database menu looks at the contents of the plus lines to extract specific information for automatically matching database records. These lines are all optional, but you are encouraged to include them for purposes of accuracy and convenience.

c. *Utterance Format*

Begin each utterance with the speaker id, followed by a blank space, followed by the exact words of that speaker. Each utterance is entered on a separate line and ended with an ending punctuation mark such as a period or question mark.

d. *Long Utterances*

Notice that when any speaker has two or more adjacent utterances each utterance is entered on a separate line. Long utterances that require more than one line will be automatically wrapped by the editor. Do not press the <Enter> key until the end of the utterance.

e. *Legal Word Characters*

SALT does not have a dictionary to define words. Instead a word is considered to be any combination of legal word characters. In general, words consist of letters, numbers, hyphen, and a special set of characters, such as the *asterisk* to mark omissions and the *slash* to mark bound morphemes, which have specific meaning in SALT. Words, which may be entered in either upper or lower case characters, are separated by blank spaces or commas. Words may be "quoted". Other characters, such as the *period* used to mark the end of an utterance or the *colon* used to mark pauses, are not legal word characters.

4. Ending Punctuation & Other Punctuation Marks

SALT uses the ending punctuation mark to determine the type of utterance. Every utterance must end with one of these end-of-utterance punctuation marks. They include a period, exclamation mark, question mark, tilde, greater-than sign, and caret. No other characters should follow the ending punctuation, not even quotation marks or special codes.

a. *Ending Punctuation*

- Statements end with a period or an exclamation mark.
- Questions end with a question mark. Use a question mark for interrogatives and for tag questions. Tag questions are brief questions which are attached to statements, and that seek agreement. For example:
E What happen/ed next?
C The animal bit him, right?

Use a question mark even if the question is in the form of a quote. For example:

C He said, "Is that you, frog"?

- Intonation prompts end with a tilde. An intonation prompt is an open-ended utterance used to prompt another speaker for a response using rising intonation. It is not presented in the form of a question but rather as a "fill in the blank". For example:

E And then the boy~

Even though these prompts are intended to elicit more elaborate language, they may result in shorter, non-spontaneous responses because they also take much of the burden of sentence construction off the other speaker. Because of this, it is important to distinguish the utterances which are the result of intonation prompts.

- Abandoned utterances end with a greater-than sign. If a speaker voluntarily stops in mid-utterance, end that utterance fragment with a greater-than sign and do not use a period. Consider this example where the speaker abandons the first utterance:
 - C And then the boy look/ed in the>
 - C The animal bit him.
- Interrupted utterances end with a caret. If a speaker is interrupted before completing an utterance, end the utterance fragment with a caret and no period, as in this example where the speaker interrupts the examiner's utterance.
 - E What did^
 - C He took the frog home.

b. *Other Punctuation Marks*

Commas and double quotes may be used freely to punctuate an utterance. But make sure that the last character of the utterance is the ending punctuation mark. Notice in the following examples that the ending punctuation mark, the period, is placed after the final quote.

C Then the boy said, "I hear something".

All other punctuation marks have special meaning and should not be used when entering an utterance. Do not use a period for abbreviations because the period is reserved for use as ending punctuation. Either spell out the word or just leave the period off as in the following example:

C And he saw the Mrs frog.

5. Utterance Segmentation

The analysis of oral language samples requires recorded speech to be segmented or divided into utterances. Utterance segmentation is relatively easy when the speaker produces short, simple utterances preceded and followed by utterances of another speaker. Utterance segmentation becomes more complicated when the speaker produces multiple utterances per speaking turn or when the speaker produces complex utterances.

Although you can define your own rules for segmenting utterances, the SALT reference databases follow specific rules when speakers produce successive utterances. The SALT reference databases are segmented into **communication units (C-units)**. The only exceptions are the *Bilingual Spanish/English Story Retell* and *Bilingual Spanish/English Unique Story* databases which are segmented into **modified communication units (MC-units)**. The following sections describe the rules for segmenting utterances into C-units (Section 5-a) and MC-units (Section 5-b).

a. *Communication Units (C-units)*

Disclaimer: There is variation in the literature on how to segment utterances into C-units. If you intend to compare your sample with samples selected from the SALT reference databases, you should segment utterances following the same rules.

The rules for C-unit segmentation were summarized from Hughes, D., McGillivray, L., & Schmidek, M. (1997), Loban, W., (1976), Strong, C.J., (1998), and from Jon Miller's class notes from Fall, 1999.

C -units are defined as "an independent clause and its modifiers" (Loban, 1976). A clause, whether it is the main clause or a subordinate clause, is a statement containing both a subject and a predicate. Grammatically, a subject is a noun phrase and a predicate is a verb phrase. Main clauses can stand by themselves and can be segmented into one C-unit. Subordinate clauses **DEPEND** on the main clause to make sense. They cannot stand alone or be separated from the main clause. So a C-unit will either consist of a main clause or a main clause with its subordinating clause(s). The following examples are broken down into main and subordinate clauses. The **main clause** is bolded and the subordinate clauses are underlined.

The canary was perched on a branch when the man approached him.

Anastasia was angry with her mother because she didn't get to buy a toy.

When the boy looked in the jar **he saw** that the frog was missing.

Notice the subordinate clauses cannot stand alone or are incomplete without the main clause. Thus, they are not separated (segmented further) from the main clause. Each of the above utterances consists of one C-unit and would be transcribed as:

- C The canary was perch/ed on a branch when the man approach/ed him.
- C Anastasia was angry with her mother because she did/n't get to buy a toy.
- C When the boy look/ed in the jar, he saw that the frog was missing.

Coordinating and Subordinating Conjunctions

When segmenting into C-units it is important to understand the different types of conjunctions which are used to link clauses. There are coordinating conjunctions and subordinating conjunctions.

- Coordinating Conjunctions

The segmenting rule is simple when utterances contain coordinating conjunctions. These conjunctions link two **main** clauses which should be separated/segmented into two utterances (or two C-units) that can each stand alone. Common coordinating conjunctions include: and, but, so (but not "so that").

Example 1:

- C The frog was sit/ing on a lily pad.
- C And then it jump/ed in.

Example 2:

- C He had to catch the frog.
- C Or the waiter would make them leave.

Example 3:

- C He climb/ed up on the branch/s.
- C But they were/n't branch/s.

Example 4:

- C My aunt gave me money for my birthday.
- C So I use/ed it to buy some new jeans.

- Subordinating Conjunctions

Subordinating conjunctions **link** a main clause and a subordinate clause. A C-unit includes the main clause with all subordinate clauses attached to it. The following are subordinating conjunctions:

Early Development: because, that, when, who

Later Development: after, before, so (that), which, although, if, unless, while, as, how, until, as__as, like, where

Examples:

C He went to the store because he was out of milk.

C When the boy saw it, the frog jump/ed.

C The man, who usually come/3s to my exercise class, was/n't there today.

C We can/'t find my cat who always run/3s away.

- "because" and "so"

Always consider "because" as a subordinating conjunction (it will never begin an utterance) unless it is preceded by the utterance of another speaker as in this example:

C I like/ed the movie alot.

E Why did you like it?

C Because it was really funny.

The word "so" can be either a coordinating conjunction or a subordinating conjunction. If its usage means "so that", it is a subordinating conjunction. Otherwise it is a coordinating conjunction.

Example 1 ("so" used as a coordinating conjunction):

C He had to go home.

C So we could/n't go to the game.

Example 2 ("so" used as a subordinating conjunction):

C He had to go home so his mom could take him to the dentist.

Other rules for segmenting C-units

- Sentence fragments

Sentence fragments are counted as separate C-units when the final intonation contour of the utterance indicates that a complete thought has been spoken. For example:

C The boy, the dog, and the frog, they were friend/s.

versus

C The boy, the dog, and the frog. { fragment based on intonation }

C They were friend/s.

- Elliptical responses

Elliptical responses (sentence fragments) to questions or prompts from the examiner are counted as separate C-units. For example:

E What did you do next?

C Shop/ed.

- Yes/No responses

If a question or intonation prompt is posed, segment the yes/no response from the subsequent utterance when succeeded by a complete utterance/c-unit. Examples:

E Is that the Spanish teacher?

C No.

C That/'s my Science teacher.

E Do you want to read your book now?

C No.

C I don't.

E Do you have any pet/s?

C Yeah.

C I have a dog.

If a question or intonation prompt is posed, do not segment the yes/no response to stand alone when followed by an incomplete utterance/c unit. For example:

E Do you have any pet/s?

C Yeah, a dog.

If an utterance begins with an affirmation or starter, and does not follow a question or intonation prompt, do not segment the affirmation/starter from the subsequent words. Examples:

E I like dog/s.

C Yeah, I do too.

E That sound/3s interesting.

C Yeah it was.

C It was really fun.

C Yeah we had such a great time.

- Tags

Do not segment phrases such as “you know”, “I guess”, and “I mean” when they are used as tags. For example:

C He/'s gonna live with his dad, I guess.

C And then, you know, they were go/ing to this town.

- Questions as Tags

Do not segment questions when they are used as tags. For example:

C They got in trouble, right?

C He miss/ed the bus, did/n't he?

- Dialogue Quotes

Dialogue quotes which are embedded in, or as part of, an utterance are counted as one C-unit as in this example:

C And the boy said, “That/'s my frog”.

Successive main clauses that occur in direct quotes are counted as separate C-units. For example:

- C And he said, "I/'m ready".
 C "I want to go to the store now".

- Grammatical errors

Ignore grammatical errors when segmenting utterances. For example,

- C They is[EW:are] go/ing now. { child said, "They is going now." }
 C We *are go/ing too. { child said, "We going too." }

- Pauses and intonation

Do not ignore pauses and intonation when segmenting utterances but, whenever reasonable, segment utterances based on grammar rules. When listening to speech, for example, there is sometimes a significant pause (with or without ending intonation) between a main clause and a subordinate clause. This inclines one to segment the utterance. With C-unit segmentation, however, the utterance would not be segmented as in this following example where the speaker paused for two seconds between the main clause and the subordinate clause:

- C I like/ed the movie alot :02 because it was really funny.

In the following segment, however, you have to consider pause time and intonation:

- C I like/ed the movie alot.
 : 0:02
 E Mhm.
 C Because it was really funny.

If there is a significant pause and ending intonation (falling for statements, rising for questions) between the speaker's first utterance and the examiner's "Mhm", segment the utterances as shown above. Otherwise, give the speaker credit for subordination and transcribe these "prompt sounds" as interjections as follows:

- C I like/ed the movie alot :02 < > because it was really funny.
 E <Mhm>.

b. *Modified Communication Units (MC-units) – used with bilingual Spanish/English samples*

Because Spanish is a pronoun-drop language (Bedore, 1999, 2001; Rojas & Iglesias, 2006), the English and Spanish transcripts in the Bilingual Spanish/English Story Retell databases were segmented into MC-units which were developed specifically for these samples to account for these omitted pronouns and to provide consistency in the transcription. Utterances containing successions of verbs without subjects are segmented and a fragment [F] code is placed at the end of each utterance lacking a stated subject as a result of this segmentation.

Examples:

- 1) C The gopher look/ed out of the hole.
 C and bit the boy [F].
- 2) C The frog jump/ed.
 C and land/ed in the water [F].
 C and hit his head on a rock [F].
- 3) C He ran.
 C jump/ed [F].

C then fell down [F].

In the next example, the speaker repeats the verb “ran” for emphasis (*once in the first utterance and twice in the second utterance*). The underscore character is used in the second utterance to avoid over-inflating values such as mean length of utterance (MLU) and number of total words (NTW). See Section 16 on “Words Repeated for Emphasis” for details. Because of this repetition, the utterances in this example are not segmented.

- 1) C He ran ran.
- 2) C He ran ran_ran.

Contrast the previous example with the next example where the speaker again repeats the verb “ran” for emphasis. But because the verbs are listed with the conjunction “and”, the utterance is segmented. The underscore character is again used to link words repeated more than once. Note that words which are linked using the underscore character are not segmented.

- 1) C He ran.
C and ran [F].
- 2) C He ran.
C and ran_and_ran [F].

6. Transcriber Comments

Comments improve the readability of the transcript and clarify events that have taken place. Comments may be inserted anywhere in the transcript without affecting the analyses.

a. Comments within Utterances

Comments which are inserted in utterances must be enclosed in braces and placed before the end-of-utterance punctuation mark. The following example shows a comment inserted at the end of an utterance at the point where the speaker laughs.

C Then the animal bit him on the nose {C laughs}.

b. Comment Lines

Comments, not related to specific utterances, may be included for clarification. Enter your comment on a line that begins with an equal sign. You may enter as many comment lines as you want at any point in the transcript, stating each new comment line with an equal sign. You are not required to include final punctuation marks at the end of comment lines. In this example, a comment is included on a line beginning with an equal sign to explain why there are so many unintelligible segments.

= child talks softly and there's a lot of background noise
C Then he X for XX.
C Then XX.

7. Unintelligible Segments

Unintelligibility can be the result of many things including the speaker turning away from the microphone or speaking too softly, equipment failure, or background noise. It can also be caused by the speaker's phonological difficulties or due to an unfamiliar listener. As a general rule, if you cannot understand the speaker's utterance after listening to it three times, it should be considered partly or completely unintelligible. Use an X to mark an unintelligible word. Use XXX when the entire utterance is unintelligible.

And use XX to mark a segment which is anywhere between a single word and the entire utterance. Note that it is often difficult to distinguish whether the unintelligible segment consists of a single word, multiple words, or the entire utterance (*after all, it's unintelligible*).

a. *Unintelligible Words and Utterances*

Consider the following examples:

- (1) C He X for the class.
- (2) C He XX.
- (3) C XXX.

The first example uses X to mark an unintelligible word. The second example uses XX to mark an unintelligible segment, more than one word but less than the entire utterance. The third example uses XXX to mark the entire utterance as unintelligible. SALT considers an utterance to be partly intelligible if the utterance contains both intelligible and unintelligible segments as in the first two examples. An utterance is unintelligible if it consists entirely of unintelligible words or syllables as in the third example. When analyzing your transcript, SALT gives you the option of removing partly intelligible and unintelligible utterances from calculations such as MLU or number of different words.

b. *Partially Intelligible Words*

Partially intelligible words are not recognized as unintelligible for SALT analyses purposes, but are treated the same as any other word. This is because SALT considers any word to be intelligible unless it consists entirely of Xs. For instance, SALT treats the word "Xing" the same as any other intelligible word. If you want this word to be considered unintelligible, you should transcribe it as "X".

8. Spelling Conventions

Consistency is very important for a reliable and representative sample. Since each word with even a slightly different spelling appears as a different word in the analysis, it is important to follow some standard spelling conventions to ensure consistency within and between transcripts. Be aware that the SALT editor's error check does not monitor spelling consistencies.

- a. *Abbreviations.* Periods are used to mark the end of utterances and are not considered legal word characters. Abbreviated words should either be spelled out or left as an abbreviation but without the period, e.g., Mr, Mister, Mrs, Dr, Doctor
- b. *Yes words:* OK, AHA, MHM, UHHUH, YEAH, YEP, YES
- a. *No words:* NAH, NO, NOPE, AHAH, MHMH, UHUH
- d. *Filled pause words:* AH, EH, ER, HM, HMM, UH, UM, MM, and any word with the code [FP].
- e. *Hyphenated words.* Follow standard spelling conventions, e.g., mother-in-law, twenty-five

- f. *Numbers*. Enter numbers in written form or as digits, e.g., twenty-one, 21
- g. *Clock time*. Do not use colons when typing clock time because it will be interpreted as a pause. Type out the words connected with an underscore character, e.g., eight_thirty, nine_o'clock
- h. *Counting and "spelled" words*. Use the underscore character to connect the numbers or letters, e.g., 1_2_3_4_5, C_A_T
- i. *Proper Names and Titles*. When proper names or titles are used, you should give the speaker credit for just one word. In the following example, the title "Frog Where Are You" is transcribed as a single word using the underscore character (*not the hyphen*).

C I have Mrs_Nelson for math class.
C The book is Frog_Where_Are_You.

- j. *Routine Phrases*. Routine phrases are phrases which are learned and used as a single unit. In the following examples, the routine phrases are transcribed as single words using the underscore character.
- C Once_upon_a_time there was a boy and a dog.
C The next morning he woke up to say, "Good_morning" to the frog.

To be consistent, make sure you use the underscore character, not the hyphen, when you link words together.

- k. *Shortened words*. There are two ways to transcribe shortened words such as "cuz" for "because" and "ya" for "you".
1. Ignore the shortened word and type out the full word. So if the speaker says "cuz", you enter it as "because". If "ya" is used instead of "you", type "you".
 2. Type the word which was spoken and then use the root identification convention to identify the full word using the vertical bar, e.g., cuz|because, ya|you.

No matter which format you use for these examples, the word roots are analyzed as "because" and "you". Refer to Section 17 for information on using the vertical bar to identify words.

l. *Sound Effects and Idiosyncratic Forms*

- Sound Effects "%" are non-word vocalizations which represent specific sounds such as those made by an animal, e.g., "meow", or an object, e.g., "vroom". Words like "shh" and "psst" are not coded as sound effects because they have word status, that is, they are common substitutes for specific words, i.e., "shh" for "be quiet" and "psst" for "hey" or "look at me".

When a sound effect is essential to the meaning or structure of the utterance, it should be entered as any other word except it should begin with a percent sign (%). There aren't recommended spellings for these sound-effect words. Just represent them as accurately as possible and try to be consistent. If the sound effect is not essential to the meaning or structure of the utterance do not enter it as a word; instead note its occurrence with a comment.

Consider the following examples:

- (1) C The dog went %grr.
- (2) C Then the boy heard %ribbit_ribbit.

- (3) C The dog growl/ed {child makes growling sound} at them.
- (4) C Then the boy heard the frog {ribbit ribbit}.
- (5) C They fell down.
= child makes falling down sounds

In the first two examples, the sound effects are essential to the meaning and structure of the utterance. Therefore, these sound effects are given word status and are preceded with a percent sign. Notice that the sound effect in the second example consists of two sounds, “ribbit ribbit”. These sounds are linked together so they count as a single word to avoid overly inflating measures such as mean length of utterance (MLU) and number of total words (NTW).

In the last three examples, the sound effects are not essential to either the meaning or the structure of the utterance. They do, however, contribute to the quality of the language sample and should be included as comments. In examples (3) and (4), the comment is placed within braces as part of the utterance. In example (5), the comment is entered as a separate entry on a line beginning with an equal sign. This comment could also have been placed in braces at the end of the utterance. *Refer to Section 6 for additional information on marking transcriber comments.*

- **Idiosyncratic Forms “%”:** In the process of mastering the phonological system, young children sometimes produce speech that differs from the adult version. Enter a percentage (%) symbol before an idiosyncratic form used by the child. Although idiosyncratic forms are not adult-like productions, they are stable productions by the child. They are consistent in reference to an object, person, or situation. It is not uncommon for these forms to remain in a child’s vocabulary for many years.

For example:

%vroom	(“car”)
%coopa	(“cookie”)

If such forms are interpretable by family members or other familiar persons, you can be assured that they are idiosyncratic forms rather than word errors.

m. *Concatenatives*

BETCHA (<i>bet you</i>)	LIKETA (<i>like to</i>)	OUTTA (<i>out of</i>)	USETA (<i>used to</i>)
COULDA (<i>could have</i>)	LOOKIT (<i>look at it</i>)	SHOULDA (<i>should have</i>)	WANNA (<i>want to</i>)
GONNA (<i>going to</i>)	MUSTA (<i>must have</i>)	SPOSTA (<i>supposed to</i>)	WHATCHA (<i>what are you</i>)
GOTTA (<i>got to</i>)	OUGHTA (<i>ought to</i>)	TRYNTA (<i>trying to</i>)	WOULDA (<i>would have</i>)
HAFTA (<i>have to</i>)			

n. *Sounds with Specific Meanings*

HMM, HUH (question or affirmation)
 IDK (intones *I don’t know*)
 UHOH (something in wrong)
 SHH or %SHH (be quiet)
 PSST or %PSST (to get someone’s attention)

- o. *Other Spellings*. AIN'T, A LOT, ATTA, NOONE, OH, OOH, OOP, OOPS, OOPSY

9. Bound Morphemes

If you want SALT to make calculations in morphemes as well as words, you must separate each bound morpheme from the free morpheme. Use a slash (/) for bound morphemes which follow the free morpheme (suffixes) and use a backslash (\) for bound morphemes which precede the free morpheme (prefixes). There should be no spaces between the bound morpheme(s) and the free morpheme.

Grammatical morphemes have been a useful index for tracking growth and complexity of young children's language. **Refer to Appendix A for the rationale behind which bound morphemes are marked.**

a. *Regular Plural Inflections /S*

Use the bound morpheme /S to indicate regular plural inflections, e.g., frog/s, tree/s. The /S is added to the noun stem without changing the spelling of the stem word, e.g., "babies" becomes "baby/s". The plural bound morpheme is not used for those words which do not have singular forms, e.g., "in the woods", "tore his pants", "congratulations".

Do not mark irregular plurals, e.g., geese, deer.

b. *Possessives /Z*

Use the bound morpheme /Z to mark possession, e.g., dad/z, Mary/z. Do not mark possessive pronouns, i.e., mine, his, hers, ours, yours, its, theirs.

c. *Plural Possessives /S/Z*

Use the bound morpheme /S/Z to indicate both plurality and possession. The plural inflection comes first followed by the possessive inflection, e.g., "the frog/s/z baby/s".

d. *Third Person Singular Verb Inflections /3S*

Use the bound morpheme /3S to indicate third person singular verb inflections, i.e., "he look/3s in the tree", "the frog jump/3s in the water". Do not mark irregular verbs (e.g., has, was) or when the sound of the root changes (e.g., do → does, say → says).

e. *Progressive verb form /ING*

Use the bound morpheme /ING for present progressive inflections that indicate ongoing action, e.g., call/ing, walk/ing. The /ING is added to the verb stem without changing the spelling of the stem word, e.g., swim/ing. Do not mark the gerund use of the verb, e.g., "reading is fun", "I like dancing".

f. *Regular Past Tense /ED*

Use the bound morpheme /ED to mark regular past tense inflections, e.g., look/ed, call/ed, like/ed. The /ED is added to the word stem with no change in the spelling of the stem, e.g., cry/ed, like/ed.

Do not mark irregular past tense verbs such as "went", "had" or "made". Do not mark predicate adjective, e.g., "was tired", "is bored". *Transcription hint*: regular past tense /ED verbs never follow a BE or GET verb.

g. *Past Participle /EN*

Use the bound morpheme /EN to mark past participle inflections, e.g., take/en, eat/en, prove/en. The /EN is added to the word stem with no change in the spelling of the stem, e.g., "prove/en.

Do not mark irregular forms (e.g., gotten, spoken, seen, been) or when the sound of the root changes (e.g., write → written). *Transcription hint*: regular form is present tense + EN as a separate syllable. /EN

verbs always follow HAVE, HAS, or HAD.

h. *Negative contractions /'T, /N'T*

Use the slash to separate the verb stem from the contraction (e.g., can/'t, did/n't). However, do not use the slash to mark contractions where the sound of the root word is different in the contracted form (e.g., won't, don't). Thus, the word "didn't" is slashed because the sound of the root word is the same (did → did/n't). But the words "won't" and "don't" are not slashed because the sound of the root words changed (will → won't, do → don't). Do not slash the contraction "ain't" because this word does not exist as an uncontracted form.

i. *Contracted verbs*

/S, /RE, /M, /LL, /D, /VE → IS, ARE, AM, WILL, WOULD, HAVE

Examples: I/'ll, I/'m, I/'d, we/'re, he/'s, we/'ve.

/H'S, /H'D, /D'S, /D'D, /'US → HAS, HAD, DOES, DID, US

Examples: "HE/H'S been sick.", "THEY/H'D better go now.", "WHAT/D'S he do for a living?", "Why/D'D the boy look for the frog?", "LET/'US go".

k. *Prefixes (not marked in the samples stored in the SALT reference databases)*

Use the backslash, "\", to mark prefixes, e.g., UN\HAPPY, DIS\LIKE. Note, however, that the prefix convention was added for prefix-based languages, such as Persian, but may be used to mark prefixes in any language.

Automating Bound Morpheme Identification

To help with identifying bound morphemes, a lookup file containing approximately 5,500 inflected words with their corresponding bound morpheme coding is available. This root identification file (RIF), [English Inflections.RIF](#), is used to automatically identify inflected words. Because this is not a complete list, you should identify the bound morphemes as you are typing your transcript. This file may then be used to catch those you miss.

Select **Edit → Identify Roots** to look at each word in the transcript. If the word is not found in the active RIFs, that word is ignored. If only one choice is found, the word is automatically identified. If a word contains more than one root option, the user is presented with a list of choices to select from. Note: the active RIFs are selected using the *Setup menu → Language Settings* option. See *Lesson 2* for directions on using this utility.

10. Mazes

Marking mazes provides an opportunity to document problems associated with utterance formulation and word finding that would otherwise go undetected. Mazes refer to repetitions, revisions, false starts and filled pauses, and are marked by enclosure in parentheses. When mazed words are removed from the utterance, the remaining words can stand by themselves. It is important to mark mazes so that they are not counted as part of the utterance. This excludes them from Mean Length of Utterance counts and other similar values.

When you have a choice of what words or phrases to mark, parenthesize the earliest occurrence as the maze. Consider the last occurrence of the word or phrase as the successful production. Incorrect maze analysis of repetitions and revisions will result if the first occurrence is not marked as the maze.

a. *Repeated Words and Phrases*

Mark any repeated word or phrase as a maze and place it in parentheses. Consider the last occurrence of the word or phrase as the successful production. Consider these examples:

- 1) C And (the) the boy was sad.
- 2) C He saw (the the) the frog.
- 3) C (The frog) the frog was gone.

In the first example, the speaker says, "And the, the boy was sad." The first instance of the word "the" is parenthesized. In the second example, the boy repeats the word "the" three times; the first two instances are enclosed within the same set of parentheses. In the last example, the phrase "the frog" is repeated; the first instance is parenthesized.

Repetitions for emphasis: if the speaker repeats one or more words for emphasis, do not mark the repeated words as mazes because mazes are used to indicate formulation problems. Consider the following example where the speaker repeats the word "everywhere" for emphasis, not as the result of a formulation problem.

- 1) C And they looked (everywhere) everywhere. { *not correct* }
- 2) C And they looked everywhere, everywhere. { *correct* }

Refer to Section 16 for more information on marking words repeated for emphasis.

b. *Revisions*

Mark any false start or reformulation as a maze and place it in parentheses. Remember that when maze words are removed from the utterance, the remaining words can stand by themselves. When you have a choice of words to parenthesize, select the earliest occurrence as the maze. Several examples follow:

- C And then (the boy) the dog bark/ed at the tree.
- C He saw (his own frog) his frog (and) with a lady frog.
- C (He want/ed to) he took the baby home.

c. *Filled Pauses*

Words or vocalizations that fill in pauses should be placed in parentheses. The default list of filled pause words include AH, EH, ER, HM, UH, UM, and any other word coded as [FP]. Consider the following example where the speaker uses the filler "um" twice:

- C It was a big (um um) bird.

In this next example, the speaker uses the word "like" in the middle of the utterance. Several transcription options are given.

- 1) C He was like really angry. { *correct if "like" contributes to the content* }
- 2) C He was (like) really angry. { *not correct: "like" isn't recognized as filled pause* }
- 3) C He was (like[FP]) really angry. { *correct: like is recognized as a filled pause* }

In utterance (1), the word "like" is considered to contribute to the content of the utterance and is not mazed. This is a reasonable interpretation if the speaker does not use the word "like" in this manner very often. Perhaps it is used here to provide emphasis. Some speakers, however, use words such as "like" as fillers throughout their narrative. If this is the case, the word "like" should be mazed. In utterance (2), the word "like" is mazed incorrectly. Since "like" is not one of the default filled pause words, the SALT program would not recognize this maze as containing a filled pause. Instead it would categorize the maze as a revision (from "like" to "really"). In utterance (3), the word "like" is mazed and

is coded as [FP]. SALT interprets all mazed words with the code [FP] as filled pause words. The *Setup menu* → *Lists* → *Standard Word Lists* option may be used to change the default list of filled pause words. Refer to Section 19 for more information on inserting bracketed codes at the end of words and utterances.

d. *Adjacent Mazes*

If different types of mazes are adjacent, you should combine them in a single maze. This will allow consistency between your transcript and the reference database transcripts. In this example, a repetition, a filled pause and a revision are all included in one set of parentheses.

C And so (it it um then he) then it bit him.

11. Part Words and Stuttering

Part words occur when a speaker fails to complete a word. Use an asterisk to replace the portion of the word which is missing. Part words are usually treated as maze components and are parenthesized.

a. *Part Word Revisions*

Consider this example:

C He saw (hi*) them.

This example illustrates a part-word revision where the part word ends with an asterisk and is parenthesized.

b. *Part Word Repetitions*

In the following example, the speaker stuttered twice on the "b" in "boy". The stuttered parts of the word end with an asterisk and are parenthesized.

C The (b* b*) boy woke up.

To mark stuttering in the middle of a word, separate the two parts of the word, before and after the stuttering, with underscore characters. Word linking is typically used to represent titles and proper names as single words. It is used here to join two or more segments of the same word. Consider these examples:

1) C The rab_ (b* b*) _bit got away.

2) C (The rab_ b* b* _bit um) the frog got away.

3) C Frog__ (wh*) _Where_Are_You.

(there are two underscore characters after the word "Frog")

In the first example, the speaker stuttered on the "b" in the middle of the word "rabbit". Notice that the stuttered sounds are asterisked and parenthesized. The second example illustrates how to mark stuttering in the middle of a mazed word. Since the entire word is parenthesized, do not parenthesize the stuttered sounds. When these split words are stored for analysis, the underscore characters are removed. Thus the word "rabbit" is stored without the underscore characters. The third example illustrates how to keep the underscore character for titles or names. You double up on one of the underscore characters so, in the third example, the title is stored as "Frog_Where_Are_You".

c. *Part Words at the End of an Incomplete Utterance*

Part words are usually treated as maze components and are parenthesized. There is, however, an exception to this rule. When the last word of an abandoned or interrupted utterance is a part word, use the asterisk to mark the part word but do not parenthesize it as it does not meet the definition of a maze. In the following example, the child abandons the first utterance mid-word.

- C Then the f*>
 = child turns to the next page
 C The boy look/ed in the hole.

Alternate coding:

If you prefer to count a string of repeated words or part-words as one dysfluency, consider coding it as follows:

- C The (b_b|b*) boy woke up.
 C (The rab_b_b|b*_bit um) the frog got away.
 C And (the_the_the|the) the frog was gone.

The Maze Summary section of the Verbal Facility report identifies “(b* b*)” as two part-word repetitions and identifies “(b_b|b*)” as one part-word repetition. It identifies “(the the the)” as three word-level repetitions and identifies “(the_the_the|the)” as one word-level repetition.

Refer to Section 17 for more information on using the vertical bar to identify the root form of the text which precedes it.

12. Omissions

You should mark omissions because they may be an indication of utterance formulation problems. An omission occurs when a word, bound morpheme, or bound clitic which is obligatory for grammatical correctness is absent. Omissions are not included in calculations such as "mean length of utterance", "number of different words", or "words per minute". They are, however, counted in the "Word and Morpheme Summary" and listed in the "Word List Tables", the "Bound Morpheme Tables", and the "Clitic Tables".

a. *Omitted Words*

The asterisk symbol is used to indicate an omitted word. At the point in the transcript where the word was omitted type an asterisk followed by the omitted word. There should be no blank spaces between the asterisk and the omitted word. Consider the following examples in which the omitted word in each utterance begins with an asterisk:

- C The boy *is call/ing for the frog.
 C The little boy was look/ing *for him.
 C The dog fell *out of the window.

b. *Omitted Bound Morphemes*

A slash followed by an asterisk is used to indicate the omission of a bound morpheme in obligatory context. Type the slash, the asterisk, and the missing bound morpheme at the point in the transcript

where it was omitted, as in the following examples.

- C The dog was follow/***ing** him.
- C And then he see/***3s** the little mommy and the baby/s.
- C The mom frog said the baby frog could go to the boy/***z** house.

c. *Omitted Word or Omitted Morpheme?*

Omitted contractions may be transcribed in two ways, as an omission of a word or as an omission of a bound morpheme. Suppose the speaker says, "He not in the jar". This could be transcribed as either,

C He ***is** not in the jar.

or,

C He/***s** not in the jar.

In the first transcription the omission is treated as an omitted word. In the second transcription, the same omission is treated as an omitted bound morpheme. It doesn't make much difference which way you mark these types of omissions since omissions are not included in any of the calculations based on words or morphemes. The important thing is to mark the occurrence of the omission.

d. *Omitted Part of Speech*

Consider the next example where it is not obvious what the omitted word should be:

C In the night the frog ***VERB** out of the jar.

The verb has clearly been omitted but it is not obvious which verb. Some possibilities include "got", "climbed", "crawled" or "escaped". In this case, the omission is marked as "***VERB**" to indicate that the verb was omitted. An article has been omitted from the following utterance.

C They look/ed ***ARTICLE** the jar.

If there are a lot of omissions, it may be informative to mark these omissions with the part of speech. If you are not interested in the part of speech which was omitted, use something generic, like ***WORD**.

e. *Multiple Omissions and Errors*

General Rule: Do not mark more than two omissions and/or word errors in an utterance. Instead, mark the entire utterance as having a problem by inserting the utterance code [EU] at the end of the utterance.

Suppose the speaker said "The dog fell the window". You could "fix" this utterance by adding the following two omissions:

1) C The dog fell ***out *of** the window.

What if the speaker had said, "Dog fell the window"? This could be fixed as:

2) C ***The** dog fell ***out *of** the window.

What if the speaker had said, "Dog window"? You could fix this because you are familiar with the story and know that, at one point in the story, the dog falls out of the window. But this is not recommended.

A common transcription mistake is to "fix" utterances so much that it becomes more of a guessing game than an accurate transcription. A good rule of thumb is to restrict your fixes to no more than two omissions. Following this rule, example 1) above would be allowed but example 2) above would not.

To mark a problem with an utterance containing more than two omissions, insert the utterance code [EU] at the end of the utterance, immediately preceding the ending punctuation as shown here.

2) C Dog fell the window [EU].

Coded utterances can be counted and called up later for further analysis. *Refer to Section 19 for more information on [EU] and other error codes.*

13. Pauses

Information about pauses, together with other analytic information, may help to identify a number of problems such as word-finding difficulties or poor comprehension. Generally, pauses indicate a possible turn-change or topic-change. Most people notice moments of silence that last longer than two seconds. Marking pause time is optional and there are no minimum or maximum pause times. Pauses may be marked whether they occur in the middle of an utterance or between two utterances. When transcribing samples for the reference databases, all pauses two seconds or longer were marked.

a. Pauses Within Utterances

If you are interested in the frequency and duration of pauses occurring within utterances, mark this information by entering the length of pauses in ":seconds" format. The pause-time information should be entered at the point in the utterance where the pause occurs. Pause-time should be separated with a blank space from any adjacent words as in this example showing a three-second pause:

C So he :03 got up on the rock.

Untimed pauses: if you want to mark the occurrence of significant pauses but do not want to time them, you may enter a colon without time as in the following example:

C And he held some (um : um) stick/s.

Pauses adjacent to mazes: if a pause occurs either immediately before or after a maze, include that pause with the maze as in the following example:

C And then the cat (um :03) scratch/ed me.

b. Pauses Between Utterances

If you are interested in the frequency and duration of pauses which occur between utterances, code this information by entering the length of the pause in "minutes:seconds" or ":seconds" format on its own line. This "pause line" must start with either a colon or a semicolon. If you are interested in marking speaker's turns, you should understand the significance of beginning the pause line with a colon or with a semicolon. This is because the pause line can be used to force the end of one turn and the beginning of another. If the pause line occurs between utterances of two different speakers, then it doesn't matter whether you use the colon or semicolon - the first speaker's turn ends and the other speaker's turn begins. If the pause occurs between consecutive utterances of the same speaker, however, use a semicolon (;) if the speaker's turn does not end (*the more common case*) or use a colon (:) to force the end of the speaker's current turn and the beginning of that same speaker's next turn.

The following example shows a four-second pause between the utterances without a change in speaker turn.

C The boy fall/3s down.

; :04

C And he land/3s in the water.

New format introduced with SALT 18 – the pause from the previous example can be entered more

simply as:

C The boy fall/3s down.

;04

C And he land/3s in the water.

Where the pause time begins with a colon or semicolon.

Enter an empty pause line if you want to mark the occurrence of significant pauses but do not want to time them. As you see in the following example, empty pause lines need only begin with a colon or semicolon.

C The boy fall/3s down.

;

C And he land/3s in the water.

14. Overlapping Speech

When two or more speakers talk at the same time, their utterances are entered separately because transcription is linear. Use angle brackets <like these> to enclose the sections of each utterance which are spoken concurrently. In conversational samples, overlapping speech may be an indicator of discourse issues. In narrative samples, it documents the amount of within-utterance prompting that occurs (*see part d in this section*).

a. One Speaker Begins Before the Other Speaker Ends

Notice in the following example that the beginning of the child's utterance overlaps the end of the examiner's question. Also notice that the examiner's utterance still needs ending punctuation (the question mark) and that the closing angle bracket is placed before the question mark.

E Then what <happen/ed>?

C <The dog> ran away.

Sometimes the first speaker will stop talking as soon as the other speaker begins. In the following example, the examiner's utterance ends with a caret indicating that it was interrupted.

E Then what <hap*^>

C <The> dog ran away.

b. Overlapping Speech in the Middle of an Utterance

The overlapping speech may occur in the middle of an utterance. Just mark the overlapping segments and continue transcribing the utterance as in this example.

C The boy and <the dog> look for the frog.

E <Good>.

c. Overlapping Speech and Mazes

The overlapping speech may occur within or around mazes as in the following example.

C <(The animal)> the animal pick/ed him up.

E <Keep go/ing>.

The order of the angle brackets and the parentheses is not important. The child's utterance could also have been transcribed as:

C (<The animal>) the animal pick/ed him up.

The following example illustrates overlapping speech occurring partly within the maze and partly after the maze.

C The (um the the <um) the> animal pick/ed him up.

E <Keep go/ing>.

d. *Examiner Prompts in the Middle of the Target Speaker's Utterance*

The examiner may use words such as "uhhuh" or "mhm" as feedback to encourage the target speaker to continue with the story. If these words overlap the speaker's words, then mark them as you would any other overlap. However, if such feedback is given in the middle of the speaker's utterance but does not overlap the speaker's words, use empty brackets to indicate the location of the prompt. In this example, the examiner said "Mhm" in the middle of the speaker's utterance, between the words "boy" and "picked up".

C And then the boy < > pick/ed up the little frog.

E <Mhm>.

15. Parenthetical Remarks

A parenthetical remark is a word or clause, occurring within an utterance, which has been added by the speaker as an explanation, comment or question. When a parenthetical remark interferes with the rest of the utterance, enclose that part of the utterance in double parentheses. Consider the following examples:

1) C The boy ((I don't know his name)) call/3s for the frog.

2) C Then the ((what/'s that call/ed)) < > gopher bite/3s him on the nose.

E <Gopher>.

In the first example, the speaker says, "The boy, I don't know his name, calls for the frog." In the second example, the speaker says "Then the, what's that called?". The examiner supplies the label "gopher" and the speaker continues, "gopher bites him on the nose". (*Notice, in the second example, that there is no question mark after the parenthetical.*) These parenthetical remarks, like mazes, interfere with the rest of the utterance. Parenthetical remarks, however, should not be confused with mazes since mazes, unlike parenthetical remarks, may be an indication of formulation difficulties.

Consider the next two examples where the parenthetical remark does not interfere with the rest of the utterance:

1) C And then, I don't know why, he start/ed yell/ing at me.

2) C And then, I don't know why, but he start/ed yell/ing at me.

In these examples, the parenthetical remark contributes to the content of the utterance and is not enclosed in double parentheses. In fact, the parenthetical remark in the second example is integral to the utterance; without it, the utterance is not grammatically correct.

Unless parenthetical remarks occur frequently within a language sample, they may not be of much analytical interest. Parenthetical remarks do have an impact, however, on language measures such as the "mean length of utterance" and "number of different words". The "main body" of the utterance contains the words used to calculate these measures. By default, the main body of the utterance excludes maze words and parenthetical remarks. Maze words are always excluded from the main body of the utterance. The *Setup menu* → *Word Base* option can be used to specify whether or not to include parenthetical remarks.

16. Words Repeated for Emphasis

Speakers sometimes use repetition to provide emphasis. To prevent these repetitions from overly inflating measures such as mean length of utterance (MLU) and number of total words (NTW), the underscore is used to link segments which are repeated more than once. The first use of each word in the repetition is transcribed normally. Words repeated more than once are linked together and treated as a single word.

a. Examples

- 1) C The dog ran ran.
- 2) C The dog ran ran_ran.
- 3) C The dog ran very very_very fast.
- 4) C They looked everywhere and everywhere_everywhere.
- 5) C They looked everywhere and everywhere_and_everywhere.

In example 1, the repetition involves a word which is repeated once and is not linked. In examples 2 – 5, the words are repeated more than once and are linked together. Repeated words do not have to be contiguous. In example 4, the word “and” is not repeated but it occurs between the first instance of “everywhere” and the two repetitions.

b. Identifying Linked Words as Instances of the Word Being Repeated

In examples 2 – 5 above, the linked words result in new words, e.g., “ran_ran” and “very_very”. To avoid overly inflating the number of different words (NDW), these words should be identified as instances of the word being repeated, e.g., “ran” and “very”. To do this, follow each linked segment with a vertical bar “|” and the repeated word as shown in these examples:

- 2) C The dog ran ran_ran|ran.
- 3) C The dog ran very very_very|very fast.
- 4) C They looked everywhere and everywhere_everywhere|everywhere.
- 5) C They looked everywhere and everywhere_and_everywhere|everywhere.

In example 2, the words “ran” and “ran_ran” would be counted as two uses of the same word. Note in example 5 that the linked phrase “everywhere_and_everywhere” is identified as a form of the word “everywhere”. This identification is not strictly accurate since the word “and” was also repeated but the vertical bar may only be used to identify one word.

Refer to Section 17 for more information on using the vertical bar to identify the root form of the text which precedes it.

17. Root Identification

Use the vertical bar when you want to identify a different word root than the one which was spoken. Be sure that the vertical bar and the root word directly follow the word used with no spaces between. Root identification instructs SALT to consider the word immediately preceding the “|” symbol as the word which was actually said, and the word immediately following to be the word root. This convention was originally created to identify Spanish verb forms (See Part 3) but has been expanded to identify words repeated multiple times for emphasis, and overgeneralization errors. Routines have been built into the SALT software to automate this identification process.

a. Identifying Words Which Are Repeated Multiple Times for Emphasis

Speakers sometimes use repetition to provide emphasis. To prevent these repetitions from overly inflating measures such as mean length of utterance (MLU) and number of total words (NTW), the underscore is used to link segments which are repeated more than once so that they are counted as one word. For example:

C The dog ran ran_ran.

These linked segments result in new words, e.g., “ran_ran”, which should be identified as instances of the word being repeated, e.g., “ran”. To do this, follow the linked segment with a vertical bar “|” and the repeated word as shown in this example:

C The dog ran ran_ran|ran.

Refer to Section 16 for details on linking words repeated for emphasis.

b. Identifying Words Due to Overgeneralization Errors

Overgeneralization errors result in non-words which should be identified as instances of the attempted word using the vertical bar. Consider the following examples:

1) C He **failed**|fall[EO:fell].

2) C Then the dog **droppeded**|drop/ed[EO:dropped] the bee_hive.

Notice in example (2) that the bound morpheme is marked in the word following the vertical bar. Also notice that overgeneralized words are marked as errors using the [EO] code.

Refer to Section 19 for more information on coding overgeneralization errors.

c. Automating Root Identification

To simplify transcription, lookup files containing words with their corresponding root forms are available. These root identification files (RIFs) are used to automatically identify a different word root than the one which was produced. The "Identify Roots" command in the Edit menu looks up all words in the transcript that have not been previously identified with the vertical bar. If the word is not found in the active RIFs, that word is ignored. If only one choice is found, the word is automatically identified. If a word contains more than one root option, the user is presented with a list of choices to select from. Note: the active RIFs are selected using the *Setup menu* → *Language Settings* option. There are two Spanish RIFs (see Part 3) , one French RIF (see Part 4) , and one English RIF.

The RIF file, English Inflections, contains approximately 5,500 inflected words. Because this is not a complete list, you should identify the bound morphemes as you are typing your transcript. This file may then be used to catch those you miss. *Refer to Section 9 for a discussion on marking bound morphemes.*

18. Elapsed Time

Timing your language sample is optional. If you insert timing markers at the beginning and end of your transcript, SALT will compute elapsed time and rate of speaking in terms of utterances/minute and words/minute. This information may be important in assessing a speaker’s productivity or fluency as we have found rate of speaking to be highly correlated with age.

If you are working with a digitized language sample, the timing information is displayed while the sample is

playing. Just note when the sample begins and when it ends. If the timing information is not provided for you, then replay the entire sample using a stop watch or clock to measure the length of the sample.

Two timing lines are needed, one at the beginning of the transcript to initialize the clock, and one at the end of the transcript to stop the clock. You have the option of inserting other timing lines, perhaps minute markers, in the transcript.

a. *Format of the Timing Markers*

Timing markers are inserted on lines beginning with a hyphen. Type the hyphen, a blank space, and the time in one of the following formats:

Format	Examples
hours:minutes:seconds	01:04:23 or 1:04:23 or 1:4:23
minutes:seconds	1:00 or 5:13 or 05:13
:seconds	:05 or :5 or :75
hours:minutes:seconds.hundredths	00:00:35.78
hours:minutes:seconds:frames	00:06:15:08 <i>calculated at 30 frames/second</i>

b. *Starting the Clock*

When a new transcript is created using the header dialog box, an initial timing entry of 0:00 is automatically supplied on a line beginning with a hyphen. This is the default initial time and may be edited if you wish to start the clock at some other time. The initial clock time must precede the first utterance. If the initial clock time is missing, the default time of zero is assumed.

c. *Stopping the Clock*

To stop the clock, insert a timing line at the end of your language sample that provides the final clock time. If the initial time is 0:00, then the final time is the elapsed time. If the initial time is not 0:00, then the elapsed time is calculated by subtracting the initial time from the final time. In the following example the elapsed time is 3 minutes and 35 seconds.

```

$ Child, Examiner
- 0:08
C Once there was a boy who had a frog.
....
C And the boy took the baby frog home.
C The end.
- 3:43
    
```

d. *Sequential Timing Lines*

Sequential timing lines are defined as timing lines which don't have any entries between them, not even timing lines. The *Setup menu* → *Analyze Settings* → *Timing Lines* setting determines whether or not to subtract the elapsed time between sequential timing lines from the total transcript time (by default, the elapsed time is subtracted). Note that pause times are never subtracted from elapsed time.

- *Example of when you would want the elapsed time to be subtracted:*

If there is an interruption during the language sample, you may need to stop and restart the clock. To do this, insert two timing lines with no utterances between them at the point of the interruption.

The elapsed time between these two timing lines is subtracted from the overall elapsed time. The following example illustrates how the clock is "paused" when someone came into the room. All the timing lines are entered as hours:minutes:seconds.

\$ Child, Examiner

- **00:07:15**

C Once there was a boy who had a frog.

...

= interruption – someone came in the room to get some papers

- **00:08:50**

- **00:09:15**

...

C And the boy took the baby frog home.

C The end.

- **00:11:15**

Based on the beginning and ending timing markers, the total elapsed time is 4 minutes (from 7:15 to 11:15). But there are no utterances or pause lines between the middle two timing markers. So the time from 8:50 to 9:15 (25 seconds) is subtracted from the total elapsed time resulting in an elapsed time for this transcript of 3 minutes and 35 seconds.

- *Example of when you would NOT want the elapsed time to be subtracted:*

Suppose you are including minute markers throughout your transcript and you are transcribing the sample where the client is mostly nonverbal, e.g., very young, uses a lot of non-transcribed sign language, relies heavily on communication boards. It is possible that there are no transcribed utterances between timing markers but you would want to include all elapsed time. You could either change the setting so that the time is not subtracted or you could insert a comment line between the timing markers.

19. Codes

Codes are the most flexible part of the SALT transcription conventions. You can create codes to mark anything that you are interested in quantifying for which there *is no* transcription convention. The power of this feature comes from the ability to directly call up the coded words and utterances and to obtain frequency summaries.

A code consists of characters enclosed within square brackets [*like these*]. Codes cannot contain blank spaces and cannot be split between lines. Avoid using symbols which have special meaning in SALT such as transcript-entry and search symbols. In particular, avoid using the "@" sign and the "=" sign as their usage will generate a warning message in SALT.

There are two types of codes: word codes and utterance codes. A word code is any code which is attached to a word, and an utterance code is any code which is not attached to a word. Although you can devise your own codes to analyze any feature of the language sample that you are interested in, this discussion will focus on the codes used within the reference database samples.

a. *Word Codes*

A word code is any code which is attached to the end of a word without any space between the word and the code. There's no limit to the number of words that may be coded or to the number of codes

that may be attached to each word. Consider the following examples:

- 1) C The big frog were[EW:was] mad.
- 2) C Then he[NoRef] pick/ed up the little frog.
- 3) C The dog fell from la[CS] ventana[CS].

In these examples, word codes are used to mark problems with specific words: 1) the speaker used the word "were" but should have used "was", 2) the speaker used the pronoun "he" but failed to establish the referent, and 3) the speaker code-switched into Spanish. The [EW] code is a standard code for all the reference database transcripts. The [CS] code is a standard code for the Bilingual Spanish/English Story Retell database transcripts (*see Part 3*). The [NoRef] code is not a standard code. It is included here to illustrate that you may develop your own set of codes to mark any feature of the speaker's language you are interested in quantifying.

b. Utterance Codes

An utterance code is any code which is not attached to a word. This code may occur anywhere in the utterance before the end-of-utterance punctuation mark. There's no limit to the number of utterance codes that may be inserted. Consider the following examples:

- 1) C And the boy walk all up to the rock [EU].
- 2) C And the frog not was there [WO].
- 3) C While he was asleep, the frog got out of the jar [SI-2].

In these examples, the utterance codes are used for a variety of purposes: 1) to mark an utterance-level error, 2) to mark non-standard word order, and 3) to code for subordination index, i.e., this utterance has two clauses. Remember, you can create codes to mark anything that you are interested in quantifying.

c. Error Codes

There is a special category of codes called "error codes". The five codes listed in this section, [EO:=], [EP:=], [EW:=], [EW], and [EU], are the default error codes (*note that the equal sign in these codes is a placeholder matching any 1 or more characters*). This list of codes, which SALT recognizes as error codes, can be changed using the *Setup menu* → *Lists* → *Current Code Lists* option. Although all codes are included in most code summaries, there are a few places, such as the *Standard Measures Report*, where only the error codes are summarized. The following error codes are used consistently when transcribing samples for the reference databases – four for word-level errors and one for utterance-level errors.

- [EO:word]

This is a word-level error code used to mark overgeneralization errors. The correct word is put inside the brackets following a colon. There is no space between the word and the code. Consider the following utterances which all contain overgeneralization errors with the root form of the word identified using the vertical bar and the [EO] code attached to the end of the word:

- 1) C He falled|fall[EO:fall].
- 2) C There were deers|deer[EO:deer] in the woods.
- 3) C That/'s hises|his[EO:his] wife.
- 4) C The next day the boy woked|wake[EO:woke] up.
- 5) C Then the dog droppeded|drop/ed[EO:dropped] the bee_hive.

In examples 1 – 4 the overgeneralized words are identified with the root form of the word. Notice that the bound morphemes in these words are not marked because we don't want to give the child

credit for an incorrectly-used bound morpheme. In example 5, however, the child is given credit for the first correctly-used bound morpheme but not for the second incorrectly-used bound morpheme (*notice that the bound morpheme is slashed in the word following the vertical bar rather than in the overgeneralized form*). Refer to Section 17 for information on using the vertical bar to identify words.

- [EP:word]

This is a word-level error code used to mark pronoun errors. The correct word is put inside the brackets following a colon. There is no space between the word and the code. The samples in the SALT reference databases used the [EP] code to mark errors with personal pronouns, possessive pronouns, and reflexive pronouns. Consider the following utterances which all contain pronoun errors with the root form of the word identified using the vertical bar and the [EP] code attached to the end of the word:

- 1) C Dr_De_Soto worked with her[EP:his] wife.
- 2) C Him[EW:he] look/ed everywhere.
- 3) C That/'s ours[EP:our] car.
- 4) C She did it by herself[EP:herself].

- [EW:word]

This is a word-level error code used to mark other words which are used incorrectly for which you know the intended word or part of speech. The correct word, if known, is put inside the brackets following a colon. There is no space between the word and the code.

Examples:

- 1) C The big frog were[EW:was] mad.
- 2) C He check/ed on[EW:in] the boot.
- 3) C The boy was find/ing[EW:looking] for him.

- [EW]

This is a word-level error code used to mark extraneous words. There is no space between the word and the code.

Examples:

- 1) C And then the boy is a[EW] sleep/ing.
- 2) C Then the kid climb/ed a rock to see more[EW] better.
- 3) C And they were[EW] have nine baby/s.
- 4) C The boy was in[EW] mad.
- 5) C And after that the boy that[EW] climb/ed the tree.

- [EU]

This is an utterance-level error code used to mark errors which cannot be associated with a specific word. It alerts the user to an utterance that would need more detailed analysis later. Look at the examples and notice that the [EU] code is inserted between the last word and the ending punctuation mark.

Examples:

- 1) C And they came to stop/ed [EU].
- 2) C They scream for everywhere [EU].

- 3) C He was have/ing a frog [EU].
- 4) C He was a tree [EU].

The [EU] code is also used when there are too many things to fix by marking omissions and/or word errors.

General Rule (expanded): Do not mark more than two omissions and/or word errors in an utterance. Instead, mark the entire utterance as having a problem by inserting the utterance code [EU] at the end of the utterance. Also, do not mark any utterance containing unintelligible segments as [EU] since it is difficult to know whether or not the unintelligible segments would

d. Other Codes used in the SALT Reference Databases

In addition to the error codes listed in the previous section, the following codes were consistently used when transcribing the samples for some of the reference databases.

- [FP]

The “filled pause” code is a word-level code used to mark non-standard filled pause words in all of the SALT reference databases. The standard set of filled pause words include: AH, EH, ER, HM, UH, UM. When these words occur in mazes, the SALT software automatically recognizes them as filled pause words. Other words, when they occur in mazes, may or may not be used as filled pauses. The [FP] code is attached to these words when they are used as filled pauses. In the following example, both of the words within the maze are recognized as filled pause words.

C The dog (um like[FP]) fell down.

Refer to Section 10 for more information on marking mazes.

- [SI-0], [SI-1], [SI-2], ...

Subordination Index (SI) is a measure of syntactic complexity which produces a ratio of the total number of clauses (*main and subordinate clauses*) to the number of utterances. The SI analysis counts clauses. Language samples, which have been transcribed and segmented into C-units, have one of the following SI codes inserted at the end of each qualifying utterance: [SI-0], [SI-1], [SI-2], etc. which means subordination index – 0 clauses, 1 clause, 2 clauses, etc.. The “Subordination Index” reports, selected from the Analyze and Database menus, count the individual SI codes and compute the composite SI score.

- [WO]

This is an utterance-level code, used in the Bilingual Spanish/English Story Retell databases, to signify words or phrases within an utterance which are out of order in Standard English or Standard Spanish. The content (semantics) of the utterance is correct; however the word order is awkward. For example:

C And then fall down the dog and the boy [WO].

- [I]

The “Imitation” code is a word-level code, used in the Bilingual Spanish/English Story Retell databases, to identify words which were provided to the speaker by the examiner. The first use of the word provided by the examiner is coded with the [I] code. Subsequent uses of the same word do

not receive the [I] code. For example:

C And then the ((what is that call/ed)) <> owl[I] scare/ed him.

E <Owl>.

C Then the owl knock/ed him down.

In the first utterance, the child stopped in the middle of the utterance to ask the examiner for the name of the owl ((parenthetical remark)). The examiner then provided the word "owl" which the child immediately used. The child's use of the provided word receives the [I] code. Subsequent uses of this word are not marked as imitations. Note that if the examiner provides a vocabulary word but the speaker does not use that word until later in the sample, that word is not an imitation and does not receive the [I] code. Marking words provided by the examiner is useful when doing a detailed analysis of the vocabulary the speaker used to retell the story. *Refer to Section 15 for more information about marking parenthetical remarks.*

- [F]

This is an utterance-level code placed at the end of each utterance lacking a stated subject as a result of segmenting utterances using modified communication units (Bilingual Spanish/English Story Retell databases). For example:

C The gopher look/ed out of the hole.

C and bit the boy [F].

Refer to Section 5 on "Utterance Segmentation" for rules on modified communication units.

- [CS]

This is a word code attached to all code-switched words (e.g., *Spanish words in English transcripts or English words in Spanish transcripts*). For example (*English transcript*):

C The dog fell from la[CS] ventana[CS].

20. Beginning and Ending Markers

By default, all entries in the transcript are included for analysis. There are times, however, when you may wish to exclude entries at the beginning or end of the transcript. The easiest way to do this is to insert beginning and ending markers in your transcript.

@begin

To exclude entries at the beginning of the transcript, Insert the entry @begin at the point in the transcript you wish to begin analysis. Do not put any spaces between the "@" sign and the word "begin". Suppose, for example, you elicited a story retell from a speaker who needed a lot of prompting to begin. You could start transcribing the sample at the point where the speaker begins the retell. However, you may want to capture the initial prompting as part of the transcript but you would not want to include these utterances in the analysis of the story retell. To do this, you would insert the entry "@begin" at the point in the transcript where the speaker begins the retell.

\$ Child, Examiner

E Now it's your turn to tell me the story.

E Tell me the story.

C Um.

- :03
 E Once there was^
 - :05
 @begin
 C A boy :03 and a dog.
 ...

The @begin and @end markers come in sets. In this case there is an implied @end marker at the end of the transcript.

@end

To exclude entries at the end of the transcript, insert the entry @end at the point in the transcript you wish to end analysis. Do not put any spaces between the "@" sign and the word "end". As an example, suppose elicited a story retell followed by a set of comprehension questions. You could score the comprehension questions without transcribing them. However, if you wish to include the speaker's responses in the transcript, you would insert the entry "@end" at the end of the story retell, before the comprehension questions.

...
 C So he took the frog home with him.
 @end
 E Is that it?
 C Yes.
 E Great.
 E Now I would like to ask you some question/s about the story.
 E Ok, first question, who is look/ing for the frog?
 C The boy.

The @begin and @end markers come in sets. In this case there is an implied @begin marker at the beginning of the transcript.

Multiple @begin and @end sets

To exclude one or more sections in the middle of your transcript, insert @begin at the point in the transcript you want to begin analysis and insert @end at the point in the transcript you want to end analysis. As an example, suppose you are eliciting a conversational sample and, as part of the language sample, the client narrates a movie he or she went to see. To analyze just the conversation, you would only include the conversational sections.

\$ Child, Examiner
 ...
 E What did you do over the weekend?
 C I watch/ed The_Lion_King.
 E Was it good?
 C Yes.
 @end
 C My favorite part was when Simba had to leave.
 C And then he made some friend/s.
 ... { C continues to tell about the movie }

@begin
E Wow, you really like/ed the movie.
E Did you do anything else over the weekend?
C I forgot to tell you about something else in the movie.
@end
C Simba got in a fight.
... { C continues to tell about the movie }
E Ok.
@begin
E Tell me about what you/'re do/ing in gym class today.
...

The @begin and @end markers come in sets. In this case there is an implied @begin marker at the beginning of the transcript and an implied @end marker at the end of the transcript.

Adjusted elapsed time

The beginning and ending markers, if found in your transcript, mark the sections of the transcript included for analysis purposes. The elapsed time, if included, is adjusted (estimated) to reflect the sections of transcript included for analysis. Suppose the elapsed time of the entire transcript is 4 minutes and includes 200 words (average of 50 words for each minute). If only 150 of the 200 words are included for analysis, the elapsed time is adjusted to 3 minutes.

Transcript cut

Suppose that the transcript cut is used to restrict the analysis to the first 50 utterances and your transcript contains one or more @begin or @end markers. The 50 utterances would be selected from the utterances included in the analysis, i.e., those not excluded by the @begin and @end markers.

Both the transcript cut and the beginning and ending markers are used to specific the section of the transcript included for analysis. The transcript cut affects all transcripts while the beginning and ending markers only affect transcripts containing the markers.

Also see

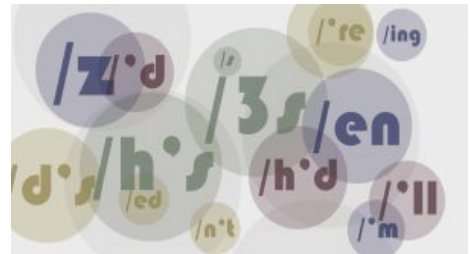
- [Help](#) → [Resources](#) → [Transcription Conventions](#) → [Summary of Transcription Conventions](#)
- [Appendix A](#) for the rationale behind which bound morphemes are marked

Appendix A: Rationale Behind Marking Bound Morphemes

Originally posted as a SALT blog on December 11, 2018

Why do we mark some bound morphemes and not others?

The SALT reference databases use a very specific set of conventions for marking bound morphemes. Our protocols do not represent the only way to mark morphemes but if you want to compare your sample against our databases, it is important for you to use these same conventions.



The SALT rules for marking bound morphemes may seem obscure at first. But there is method to our madness. This blog explains the rationale behind SALT's conventions for marking bound morphemes. It goes beyond, "because it's been this way for a long time and here are the rules to memorize". Or, a little more clinically, "because these are the developmental morphemes and here are the rules to memorize". Our hope in writing this blog is that by understanding the "why" behind the conventions, the rules will make more sense and, hopefully, it will be easier to implement them.

To a large extent, SALT's convention for marking bound morphemes is patterned after the conventions used by Roger Brown (1973) in the calculation of MLUm (mean length of utterance in morphemes) back in the early days of language sample analysis.

Inflectional morphemes versus Derivational morphemes

Brown excluded derivational morphemes in the calculation of MLUm. To understand why, we first need to distinguish between the two types of bound morphemes – inflectional and derivational. *Many of the explanations and examples in this section are taken from the following websites:*

<https://semanticsmorphology.weebly.com/inflectional-and-derivational-morphemes.html>

<http://www.mathcs.duq.edu/~packer/Courses/Psy598/Ling-Morphology.pdf>

- **Inflectional morphemes** are used to show some aspects of the grammatical function of a word. *They are always suffixes and always result in the same part of speech.* We use inflectional morphemes to indicate if a word is singular or plural, whether it is a comparative or possessive form, and to mark tense. *Inflectional morphemes never change the grammatical category (part of speech) of a word.* For example, *shoe* and *shoes* are both nouns, *tall* and *taller* are both adjectives, and *look* and *looked* are both verbs. The inflectional morphemes simply produce different versions of the words.

There are eight inflectional morphemes. They are shown in the following table:

Inflectional Morphemes		Added to	Example
-s, -es	plural	nouns	I have two black cats.
-'s, -s'	possessive	nouns	My dog's bark is very loud.
-er	comparative	adjectives	I have longer hair than you do.
-est	superlative	adjectives	He has the biggest pumpkin.
-s	3 rd person singular	verbs	She runs fast.
-ed	past tense	verbs	He played basketball.
-en	past participle	verbs	She has eaten everything.
-ing	progressive tense	verbs	He is playing basketball.

When children use inflectional morphemes, they are (generally) demonstrating their knowledge of the base

word *as well as* their ability to encode the plural, possessive, or tense of that root word.

- **Derivational morphemes**, in contrast, are used to create new words or to make words of a different grammatical class (part of speech) from the root form. For example, by adding the derivational morpheme -er the verb *read* becomes the noun *reader*. The addition of -ize changes the adjective *normal* to the verb *normalize*. Similarly, we can derive the adjectives *helpful* and *helpless* by adding -ful and -less to the noun *help*.

However, some derivational morphemes do not change the grammatical category of a word but they do significantly change the meaning of the word. For example, we can derive the nouns *neighborhood* and *kingdom* by adding the derivational suffixes -hood and -dom to the nouns *neighbor* and *king*. And derivational prefixes such as un- and re- generally do not change the category of the word to which they are attached. Thus, both *happy* and *unhappy* are adjectives, and both *fill* and *refill* are verbs. But each of these pairs of words, although clearly related, have very different meanings.

Derivational morphemes may be either suffixes or prefixes and usually, but not always, result in a different grammatical category. The following table lists some of the common derivational morphemes:

Common Derivational Morphemes (Suffixes)	Added to	Results in	Examples
-ize	nouns adjectives	verbs verbs	rubberize normalize
-ful	nouns	adjectives	playful, helpful, beautiful
-ly	nouns adjectives	adjectives adverbs	manly, friendly proudly
-sion	verbs	nouns	discussion
-hood, -dom	nouns	<same>	neighborhood, kingdom
Derivational suffixes which overlap with inflectional suffixes (<i>though they serve a different purpose</i>)			
-er	verbs nouns/verbs	nouns nouns	reader grader
-ed	verbs	adjectives	am tired, was bored
-en	verbs	adjectives	this spot is taken
-ing	nouns/verbs nouns/verbs	nouns adjectives	biking is fun interesting story
Common Derivational Morphemes (Prefixes)	Added to	Results in	Examples
un-, a- dis-, re- anti-	Adjectives verbs nouns	<same>	unhappy, atypical dislike, refill, reevaluate, review anti-aircraft

According to Brown, young children generally do not learn a base word and then apply a derivational morpheme to encode extra information. Instead, they usually learn these as fully-formed, independent words with their own specific meaning. Although derivational morphemes can logically be split into a root word and a prefix or suffix, these smaller parts are not meaningful to the child speaker and so they should not be considered separate morphemes in this case.

Guo, et al. (2018) gives evidence for this, including:

- There is ample psycholinguistic evidence that base words and derived words (e.g., *beauty*, *beautiful*) are stored as separate lexical entries and should be given equal weight.

- Children may learn a derived word (e.g., *beautiful*, *interesting*) before the base word (e.g., *beauty*, *interest*). It seems unlikely that children would add the derivational morphemes to these base words to form the derived words. Side note: to test this, we looked at samples from 355 typically-developing children under the age of 7 taken from the SALT Play and Conversation databases. The derived word *beautiful* was used five times while its base form *beauty* was only used once. And *interesting* was used twice and there were no instances of its base form *interest*.

They consider that derivation is a word-formation process, not a grammatical encoding process. Therefore, derivation reflects a speaker's lexical skills, not grammatical skills.

So what are the rules behind the SALT conventions?

RULE 1: Do not mark derivational morphemes. Do mark (most) inflectional morphemes.

Why?

In short, we want to mark bound morphemes when they reflect the child speaker's understanding that the prefix/suffix has a meaning separate from the root word. When using derivational morphemes - learned as fully-formed, independent words - a child speaker is only utilizing a single meaning. In contrast, when using an inflectional morpheme, the child is utilizing two meanings: the root word and the encoded plural/possessive/tense meaning.

By not marking derivational morphemes, we do not give the speaker credit for bound morphemes which change the meaning of the word (e.g., happy → unhappy) or change its grammatical category (e.g., friend → friendly).

However, when the child speaker is likely to have understood the separate meanings of the bound morphemes, we do want to mark them. So we mark most inflectional morphemes. Most, but not all...

RULE 1a: Do not mark the comparative (inflectional) morphemes -er and -est.

Why not?

Although -er and -est are inflectional morphemes, Brown did not count them because they are not obligatory. According to Guo, et al (2018), this means that it is a stylistic choice whether to use comparative and superlative form rather than the uninflected adjective. For instance, when given a choice of several balls of varying sizes, a child may select the largest one and say, "I have the *big one*" unless prompted to make a comparison.

RULE 1b: Do not mark irregular forms.

Why not?

Irregular forms are counted as single morphemes because children (generally) learn them as separate forms, rather than inflections of their base forms.

The following table lists examples of irregular words:

Category	Examples of irregular words
plural	man → men, foot → feet, cactus → cacti, deer → deer
all possessive pronouns	I → mine, he → his, she → hers, we → ours, you → yours, it → its, they → theirs
3 rd person singular	have → has, is → was
past tense	begin → began, break → broke, go → went, get → got

past participle (regular form is present tense + EN as separate syllable)	begin → begun, break → broken, go → gone, get → gotten, see → seen, be → been
negation	will → won't

Some words are irregular because the sound of the base form changes. These words follow the standard spelling for inflected or contracted words but change its sound. Some examples follow:

Category	Examples of changed sound
plural	leaf → leaves, wolf → wolves
3 rd person singular	do → does, say → says
past participle	drive → driven, write → written
negation	do → don't

RULE 1c: Do not mark plurals for words which do not have a singular form.

Why not?

Children would not have learned the singular form in order to then apply the rule for plurals. Following are some examples:

Examples of Plurals Without a Singular Form			
belongings	glasses (<i>spectacles</i>)	pants	shorts
binoculars	goggles	panties	suds
breches	jitters	remains	tights
clothes	knickers	riches	trousers
drawers	pajamas	shenanigans	tweezers

RULE 2: Do not mark concatenatives.

Why not?

Brown counted concatenatives as single morphemes because, like irregular forms, children may have stored them as holistic chunks. Following is a list of concatenatives:

Examples of Concatenatives (<i>meaning</i>)			
betcha (<i>bet you</i>)	liketa (<i>like to</i>)	outta (<i>out of</i>)	useta (<i>used to</i>)
coulda (<i>could have</i>)	lookit (<i>look at it</i>)	shoulda (<i>should have</i>)	wanna (<i>want to</i>)
gonna (<i>going to</i>)	musta (<i>must have</i>)	sposta (<i>supposed to</i>)	whatcha (<i>what are you</i>)
gotta (<i>got to</i>)	oughta (<i>ought to</i>)	trynta (<i>trying to</i>)	woulda (<i>would have</i>)
hafta (<i>have to</i>)			

RULE 3: Mark contracted words.

Why?

Contractions combine two words into one (e.g., *we are* → *we're*). The speaker is given credit for the same number of morphemes whether using two words or the one contracted word.

Contractions		Examples
-t -n't	negation	I can't leave yet. He doesn't know better
-s	is has does us	It's time to go. He's been sick. What's he do for a living? Let's go.
-re	are	You're late.
-m	am	I'm ready to take the test.
-ll	will	I'll wait over here.
-d	would had did	He'd do it. He'd better leave now. Why'd the boy look over there?
-ve	have	We've a lot to do.

Summary

These rules can be summarized as:

- Only mark the following inflectional morphemes and contractions.

Inflectional Morphemes		Contractions	
/s	plural	/'t, /n't	negation
/z	possessive	/'s, /'re, /'m	is, are, am
/3s	3 rd person singular	/'ll, /'d	will, would
/ed	past tense	/'ve, /h's, /h'd	have, has, had
/en	past participle	/d's, /d'd	does, did
/ing	progressive tense	/'us	us

- Do not mark irregular forms, concatenatives, or plurals which do not have a singular form.

Formatting Notes

- Use a slash (/) for bound morphemes which follow the free morpheme (suffixes) and use a backslash (\) for bound morphemes which precede the free morpheme (prefixes). There should be no spaces between the free morpheme and the bound morpheme(s).
- When the spelling of a free morpheme such as CRY changes with the addition of the bound morpheme, use the root spelling of the free morpheme (as if the bound morpheme is not there). Then, simply add the slash plus the bound morpheme (i.e. CRY/ED). If this is not done, the stem CRI will be treated as a different word from CRY and thereby inflate Type-token ratio (TTR) as well as Number of Different Words (NDW).

A Final Note

While we feel that Roger Brown's research published in 1973 has stood the test of time, we understand that it is not the only way to understand the use of morphemes or to calculate MLUm. If you have a language sample from which you want to compare the transcript with samples selected from the SALT reference databases, then these conventions are the most appropriate. However, these conventions may not be appropriate for all speakers or in all cases. Future blog posts will highlight some of these alternate scenarios and how they can be accommodated using custom coding schemes in SALT.

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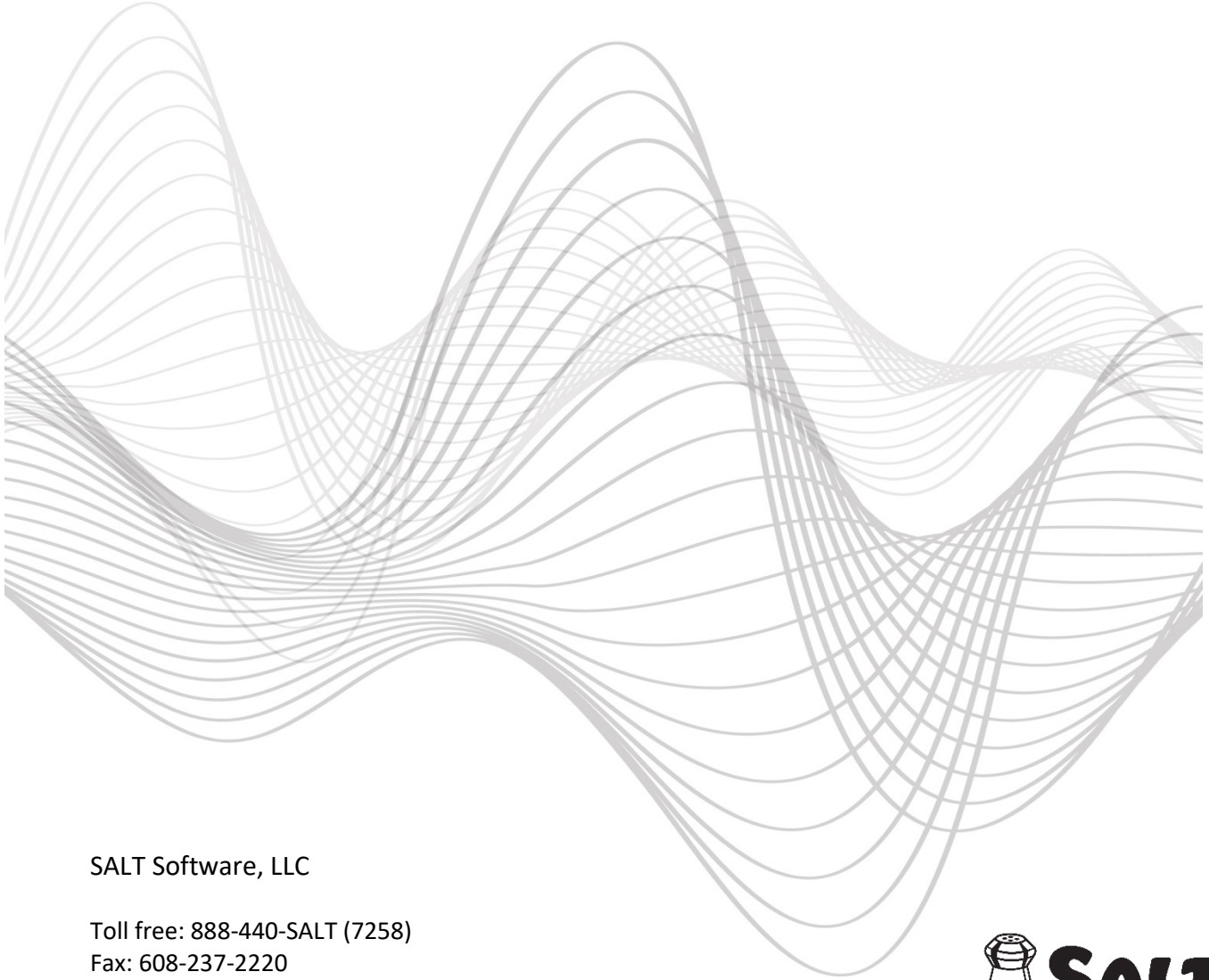
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TRANSCRIPTION CONVENTIONS

Adapted for Spanish



SALT Software, LLC

Toll free: 888-440-SALT (7258)

Fax: 608-237-2220

support@saltsoftware.com

www.saltsoftware.com



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A. Using SALT with Spanish Samples

1. Overview

Our bilingual Spanish/English research project (Miller, Heilmann, Nockerts, Iglesias, Fabiano, & Francis, 2006) presented us with a major challenge; how to make consistent transcription decisions for Spanish that would allow comparison with English transcripts. In order to compare an individual’s Spanish language skills with their English language skills we needed to be sure we were counting the same elements, words, morphemes, and utterances. Aquiles Iglesias and Raúl Rojas at Temple University collaborated with us to design the Spanish transcription format for SALT. It took the better part of a year to work out how to code specific features of Spanish which are inherently different than English, such as verb inflections and bound versus unbound clitics.

Most of the standard SALT transcription conventions can be applied to languages other than English. When adapting the transcription conventions to other languages, however, it is important to consider the structure and use of the language. It isn’t enough to just write the words as they were spoken. You need to make sure that the representation you use results in an accurate analysis of the language. If using SALT to assess the language of bilingual speakers, it’s important to develop transcription conventions to allow for comparison of the two languages.

Begin by defining how words are represented. After that, the rest should fall into place. For English samples, we define words by marking bound morphemes so that “look”, “look/ed”, and “look/ing” are all the same word. In inflected languages, such as French and Spanish, we identify the root form of the word using the vertical bar, e.g., “buscan|buscar”, “buscando|buscar”. We mark prefixes in prefix-based languages, such as Farsi (Persian).

2. Character Sets

SALT supports the UTF-8 character set which includes all the Spanish characters.

Are these characters built into the SALT program? No, other character sets are not built into the SALT program although they are accessible from within SALT in the following ways:

- **Using the “Edit menu → Insert Symbol” option in SALT.**

The "Edit menu --> Insert Symbol" option in SALT allows you to set up a list of characters which can be inserted into the editor using minimal keystrokes. By default, the list contains the non-standard keyboard characters used for Spanish and French but this list can be edited to suit your needs.

- **Windows OS methods of accessing the diacritic characters**

Method 1: Using the standard Windows® keyboard.

This is an easy method but may or may not work for you, depending on your operating system and/or keyboard.

Hold down the CTRL key and type (then release the keys)	Then type	To get
' (single quote)	a, A, e, E, i, l, o, O, u, or U	á, Á, é, É, í, Í, ó, Ó, ú, or Ú
` (back quote)	a, A, e, E, i, l, o, O, u, or U	à, À, è, È, ì, Ì, ò, Ò, ù, or Ù
: (colon)	a, A, e, E, i, l, o, O, u, U, y or Y	ä, Ä, ë, Ê, ï, Ì, ö, Ö, ü, Ü, ÿ, or Ÿ
^ (caret)	a, A, e, E, i, l, o, O, u, or U	â, Â, ê, Ê, î, Î, ô, Ô, û, or Û

~ (tilde)	a, A, n, N, o, or O	ã, Ã, ñ, Ñ, õ, or Õ
, (comma)	c or C	ç or Ç

Other character combinations are also available.

Method 2: Add the "United States International" input language.

This option involves adding an input language to your keyboard. It's a one-time setup and allows you to switch between your default keyboard and the United States International keyboard. Rather than provide instructions for each operating system, use the help option to search for instructions.

Search for "add or change input language". Follow directions to add the "United States International" keyboard located within the "English (United States)" keyboard.

Once the keyboard is added, there should be an icon added to your system tray which looks like a small keyboard. This icon allows you to switch between your default keyboard and the US International keyboard. When the language setting is set for "United States - International" you can access most of the special characters as follows:

Hold down the RIGHT ALT key and type	To get	First type " (double quote), then type	To get
a or A	á or Á	u or U	ü or Ü
e or E	é or É	SPACE BAR	"
i or I	í or Í	Note: to type the double quote in your transcript, type the double quote followed by a blank space.	
o or O	ó or Ó		
u or U	ú or Ú		
n or N	ñ or Ñ		
number "1" key	í		
slash key "/"	ç		

Other character combinations are also available.

- **3rd party software.**

There are several free software applications which may be downloaded to provide easy access to the other character sets, e.g., www.onehourprogramming.com.

- **Use other word processor.**

Alternatively, you may prefer to type the entire transcript in Microsoft Word or some other word processor where other character sets are available. Then, save the transcript as a text file with the extension .SLT. Or, cut/copy and paste the text from Microsoft Word (or other word processor) into the SALT transcript window.

B. Transcription Conventions Adapted for Spanish Samples

The implementation of Spanish transcription and analysis using SALT is the result of collaboration with Aquiles Iglesias from Temple University and Raúl Rojas from University of Texas at Dallas. The samples stored in the *Bilingual Spanish Story Retell* and *Bilingual Spanish Unique Story* databases were transcribed using these conventions.

1. Diacritic Characters

The use of diacritics can mark grammatical differences between identical word forms, therefore potentially altering the meaning of the word and utterance. Including them will make the transcript more valid. The use of an accent can affect how a word gets counted as part of a certain word list (e.g., in Spanish, “el” as the direct article meaning “the” vs. “él” the personal pronoun meaning “he”).

The characters "¿" and "¡" may be entered at the beginning of questions and exclamations. They are considered punctuation marks and are ignored for analysis. For example:

C ¿Rana dónde estás?

C ¡Vamonos, vamonos!

2. Utterance Segmentation into MC-units

Because Spanish is a pronoun-drop language (Bedore, 1999, 2001; Rojas & Iglesias, 2006), the transcripts in the Bilingual Spanish/English Story Retell databases were segmented into MC-units which were developed specifically for these samples to account for these omitted pronouns and to provide consistency in the transcription of both Spanish and English samples. Utterances containing successions of verbs without subjects are segmented and a fragment [F] code is placed at the end of each utterance lacking a stated subject as a result of this segmentation.

3. Root Identification

Root identification instructs SALT to consider the word immediately preceding the "|" symbol as the word which was actually said, and the word immediately following to be the word root. This convention was originally created to identify Spanish verb forms but has been expanded to identify Spanish diminutives and Spanish superlatives, as well as words repeated multiple times for emphasis and overgeneralization errors. Routines have been built into the SALT software to automate this identification process.

a. Spanish Verbs

The highly inflected morphology of Spanish can significantly affect the post-inflected root word/stem. The word root identification convention, vertical bar "|", is used to credit Spanish-speakers for exhibiting use of morphological forms as well as to avoid over-inflation of the number of different words (NDW) used. If a speaker produces a variety of inflected forms of the same word within a transcript (e.g., es, son, eran, éramos), each production is coded to identify the root word (e.g., es|ser, son|ser, eran|ser, éramos|ser). The speaker would be given credit morphologically for producing different words, but each inflected form would be considered an inflected variation of the same root word, “ser”.

For example:

C **Había|haber** una vez un niño que **tenía|tener** una rana.

Root identification instructs SALT to consider the word immediately preceding the "|" symbol as the word which was actually said (i.e., "había" and "tenía"), and the word immediately following to be the root word (i.e., "haber" and "tener").

Auxiliary Verbs

When a verb is used as an auxiliary, precede the root identification with "aux", (e.g., "auxestar",

"auxandar", "auxsalir"). For example:

- 1) C El perro **está** | **estar** con las abeja/s.
- 2) C El niño **estaba** | **auxestar** buscando | buscar la rana en el árbol.

In the first utterance, "está" is used as a main verb and identified as a form of "estar". In the second utterance, "estaba" is used as an auxiliary verb and identified as a form of "auxestar".

b. Spanish Diminutives

In Spanish, diminutives are bound morphemes that change the meaning of a word by indicating diminution. Diminutives in true form are suffixes attached to an object and are used in reference to something of a larger size. The following is a list of known diminutive suffixes: -ete, -eta, -ico, -ica, -ito, -ita, -illo, -illa, -uco, -uca, -ucho, -ucha, -uelo, -uela

The use of diminutives may be so pervasive in some Spanish dialects that the morphological inflection of the diminutive may no longer indicate diminution. In order to prevent potential mean length of utterance in morphemes (MLUm) inflation for speakers who use a high frequency of diminutives without strictly indicating diminution, it was decided that diminutives (i.e., perrito, casita) should not be counted as bound morphemes. Instead, diminutives are coded as main body words derived from the corresponding root words. Therefore, coding for diminutives follows the root identification convention.

For example:

- C Él dice | decir **ranita** | **rana** dónde estás | estar?
- C El **perrito** | **perro** tumbó | tumbar las abeja/s.

c. Spanish Superlatives

Superlative forms, suffixes indicating that an object is larger than a referent, are not as pervasive in the Spanish language as are diminutives. Some common superlative suffixes include: -ote, -ota, -ísimo, -ísima. Like diminutives, coding for superlatives follows the root identification convention.

For example:

- C Y el niño se[x] subió | subir en un árbol bien grandote | grande.
- C Y el agua estaba | estar fríísima | fría.

d. Automating Root Identification

To simplify transcription, lookup files containing words with their corresponding root forms are available. These root identification files (RIFs) are used to automatically identify a different word root than the one which was produced. The "Identify Roots" command in the Edit menu looks up all words in the transcript that have not been previously identified with the vertical bar. If the word is not found in the active RIFs, that word is ignored. If only one choice is found, the word is automatically identified. If a word contains more than one root option, the user is presented with a list of choices to select from. Note: the active RIFs are selected using the "Language Settings" option in the Setup menu. There are two Spanish RIFs:

Spanish Verbs contains a complete list of over 469,000 verbs. The only verbs intentionally left out of the file are "las", "la", "les", "le", "lo", "una", and "uno" due to their word form overlap with specific articles and pronouns. You should use this automation feature to identify all the verbs in your transcript.

Spanish Nouns and Clitics contains approximately 1,300 of the words used most often to retell the *Frog, Where Are You?* story. Because this is not a complete list, you should identify the plurals, diminutives, superlatives, and bound pronominal clitics as you are typing your transcript. This file may then be used to catch those you miss. Refer to Section 4 for a discussion on marking bound morphemes and to Section 5 for a discussion on marking bound pronominal clitics.

4. Plural Bound Morpheme

SALT uses bound morphemes to mark the use of plurals, possessives, verb inflections, and contractions. The same is not true for Spanish as possessives, verbs conjugations, and contractions operate under a distinct inflectional system which is often not amenable to the attachment of bound morphemes. Plurals are the only bound morphemes marked, e.g., “rana/s”.

5. Bound Pronominal Clitics

a. About Pronominal Clitics

As the name suggests, pronominal clitics are unstressed object pronouns which can be prosodically bound, morphosyntactically bound, or both. Pronominal clitics must occur with a verb, because they are verb-related as direct or indirect objects. They can be located preceding the verb as a *proclitic*, e.g., lo buscó, or positioned after the verb as an *enclitic*, e.g., buscarlo. Pronominal clitics can move within an utterance, which changes the form but not necessarily the content of the utterance. Accordingly, these pronouns can occur as freestanding clitics or as bound clitics.

b. Why code for bound pronominal clitics?

Spanish has great word order flexibility. The Spanish language is not as dependent on word order for meaning as is the English language. In order to limit over-inflation of MLU and control the effects of dialectal variation, bound (not freestanding) pronominal clitics are identified with a plus sign ‘+’.

The freedom of movement that pronominal clitics possess is an important aspect in individual differences across language development and dialect. For example, a speaker could say “give it to me” in two ways:

- 1a) C me lo das. *Give it to me.*
 1b) C dáme lo. *Give it to me.*

Regardless of which utterance the speaker produces, (1a) or (1b), the content of the two utterances remains constant. Due to strict rules of spelling convention, (1a) is written as three separate words, and (1b) is written as one word. Herein lies the temptation to assign three words to (1a), and only one word to (1b). However, it is important to remember that SALT transcription analysis is based on oral language, not on written language. Therefore, both utterances should receive the same morphological credit.

Utterance (1b) should be coded for bound clitics in the following manner so that the word “dáme lo” is counted as three words:

- 2b) C dá+me+lo. *Give it to me.*

The “+” symbol indicates the use of bound clitics by the respective personal pronouns. Whether or not pronouns indicate clitic-usage, they are still analyzed as separate main body words and separate

root words. Thus, utterances (1a) and (2b) will be given equal weight in the analysis. Both utterances possess the same verb and object pronouns; they have equal morphological value.

It should be clear that pronominal clitics can be bound or they can be freestanding, depending on the order of the pronoun(s) in relation to the verb. What is constant is that pronominal clitics always appear with a verb, even though they do not always stand immediately next to the verb.

For example:

- C Él está **gritando+le** a la rana. *He is screaming at the frog.*
 C Él **le** está **gritando** a la rana. *He is screaming at the frog.*

c. Bound morphemes versus bound pronominal clitics

Bound morphemes are marked with a slash, e.g., rana/s, and bound pronominal clitics are marked with a plus sign, e.g., buscar+lo. Bound morphemes receive morpheme credit but not word credit. Thus “rana/s” would be counted as one word with two morphemes. Bound clitics receive both word and morpheme credit. Thus “buscar+lo” would be counted as two words and two morphemes.

Omissions

Suppose the speaker said “él está gritando a la rana”. The omitted pronominal clitic would be coded as:

- C Él está gritando+*le a la rana.
 or as
 C Él *le está gritando a la rana.

In the first transcription the omission is treated as an omitted bound clitic. In the second transcription, the same omission is treated as an omitted unbound clitic.

6. Spelling Conventions

- Yes words: OK, AHA, MHM, UHHUH, SÍ
- No words: NO, AHAH, MHMH, UHUH
- Filled pause words: AH, EH, ER, HM, HMM, UH, UM, and words coded as [FP].

7. Reflexive vs Non-reflexive Pronouns

Some pronouns can be used both reflexively and non-reflexively, with an overlap in word form (i.e., ME, TE, SE, OS, and NOS). The Spanish Standard Word Lists assume the reflexive personal pronouns are transcribed with the word code [X] and the non-reflexive pronouns are transcribed without the [X]. This difference is necessary to avoid giving a speaker credit for using both a reflexive and non-reflexive pronoun simultaneously (*since the pronoun words are identical*). If reflexive pronouns are not coded this way, they will be counted with the non-reflexive personal pronouns instead of with the reflexive personal pronouns. The word code, [X], is used to designate the use of reflexive pronouns in utterances such as:

- C El niño **se[X]** fue | ir con el perro. *The boy left with the dog.*
 C El niño dijo yo **me[X]** voy para la casa. *The boy said I go home..*

On the other hand, [X] is not used when the pronoun is not reflexive:

- C El perro **me** ayudó a conseguir la rana. *The dog helped me find the frog.*
 C El niño **se** la lleva a su casa. *The boy takes her to his home.*

Reflexive Verbs and Their Conjugations

Reflexives are used to reflect action done to oneself, himself, herself, etc, as noted in the examples below. Personal pronouns can be used reflexively or non-reflexively. Reflexive pronouns accompany reflexive verbs, and the third person reflexive pronoun “se” may occur in clauses where the subject is ambiguous (he, she, they).

To review, some reflexive verbs are exemplified:

Reflexive	Translation
me meto	I[myself] get into.
te levantas	You[yourself] get up.
nos acostamos	We[ourselves/each other] lie down.
se cae	He[himself]/she[herself]/it[itself]/you[yourself](formal) fall(s).
se caen	You[yourselves](formal)/they[themselves/each other] fall.
se baña	He[himself]/she[herself]/it[itself]/you[yourself](formal) bathe(s).
se bañan	You[yourselves](formal)/they[themselves/each other] bathe.

"Romance Reflexive" pronouns accompany intransitive verbs. Intransitive verbs do not require a direct object, but they may take one in certain environments (i.e., with romance reflexives). For example, “El perro se[X] cayó.” *The dog fell.* In this example, “se” is a romance reflexive that accompanies the intransitive verb “cayó.” “Cayó” is considered intransitive because it can stand on its own or may take the romance reflexive pronoun “se.”

El perro cayó. or El perro se cayó.

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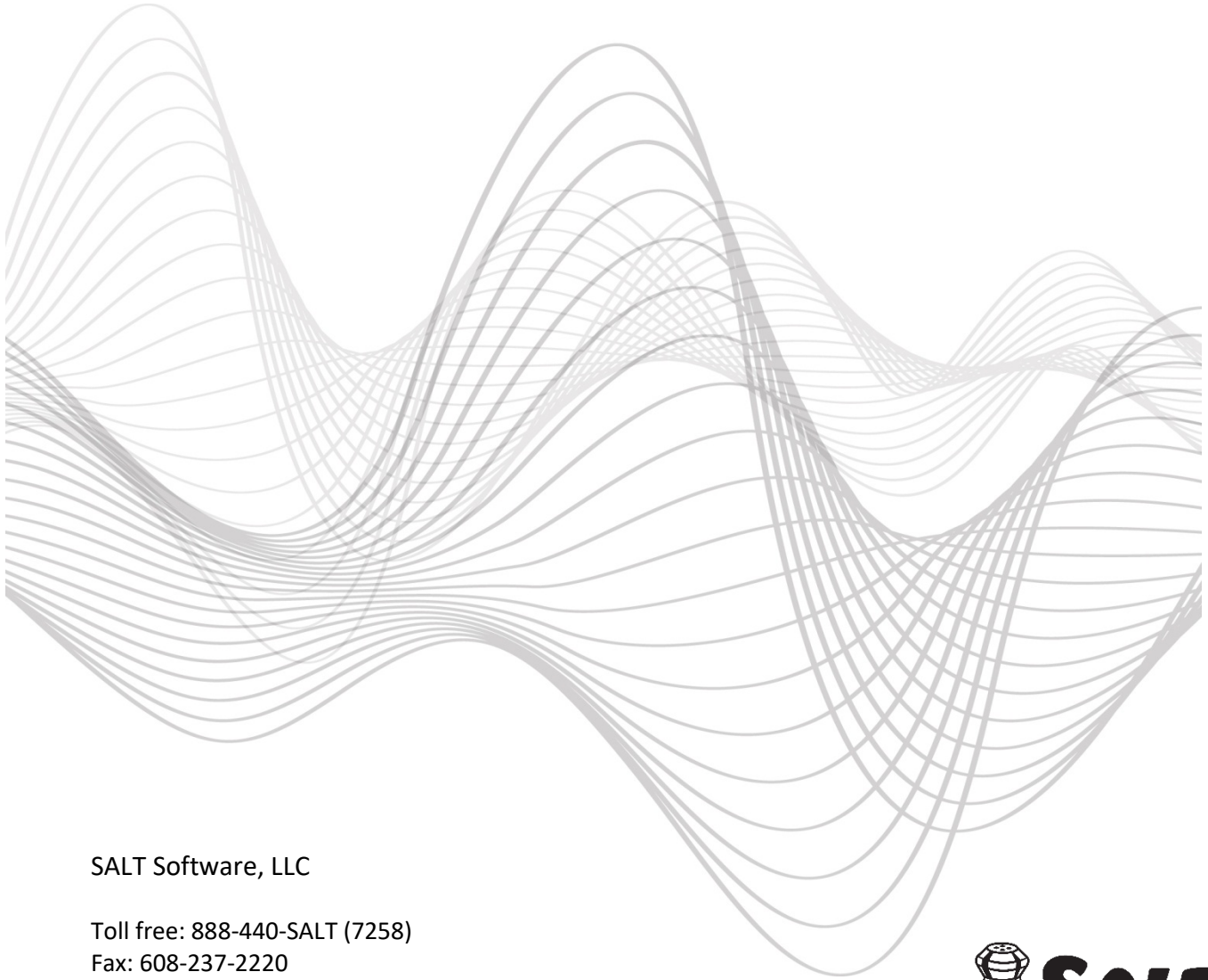
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TRANSCRIPTION CONVENTIONS

Adapted for French



SALT Software, LLC

Toll free: 888-440-SALT (7258)

Fax: 608-237-2220

support@saltsoftware.com

www.saltsoftware.com



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A. Using SALT with French Samples

1. Overview

Most of the standard SALT transcription conventions can be applied to languages other than English. When adapting the transcription conventions to other languages, however, it is important to consider the structure and use of the language. It isn't enough to just write the words as they were spoken. You need to make sure that the representation you use results in an accurate analysis of the language. If using SALT to assess the language of bilingual speakers, it's important to develop transcription conventions to allow for comparison of the two languages.

Begin by defining how words are represented. After that, the rest should fall into place. For English samples, we define words by marking bound morphemes so that *look*, *look/ed*, and *look/ing* are all the same word. In inflected languages, such as French and Spanish, we identify the root form of the word using the vertical bar, e.g., *boit/boire*, *tiens/tenir*.

2. Character Sets

SALT supports the UTF-8 character set which includes all the French characters.

Are these characters built into the SALT program? No, other character sets are not built into the SALT program although they are accessible from within SALT in the following ways:

- **Using the "Edit menu → Insert Symbol" option in SALT.**

The "Edit menu --> Insert Symbol" option in SALT allows you to set up a list of characters which can be inserted into the editor using minimal keystrokes. By default, the list contains the non-standard keyboard characters used for Spanish and French but this list can be edited to suit your needs.

- **Windows OS methods of accessing the diacritic characters**

Method 1: Using the standard Windows® keyboard.

This is an easy method but may or may not work for you, depending on your operating system and/or keyboard.

Hold down the CTRL key and type (then release the keys)	Then type	To get
' (single quote)	a, A, e, E, i, l, o, O, u, or U	á, Á, é, É, í, Í, ó, Ó, ú, or Ú
` (back quote)	a, A, e, E, i, l, o, O, u, or U	à, À, è, È, ì, Ì, ò, Ò, ù, or Ù
: (colon)	a, A, e, E, i, l, o, O, u, U, y or Y	ä, Ä, ë, Ê, ï, Ì, ö, Ö, ü, Ü, ÿ, or Ÿ
^ (caret)	a, A, e, E, i, l, o, O, u, or U	â, Â, ê, Ê, î, Î, ô, Ô, û, or Û
~ (tilde)	a, A, n, N, o, or O	ã, Ã, ñ, Ñ, õ, or Õ
, (comma)	c or C	ç or Ç

Other character combinations are also available.

Method 2: Add the "United States International" input language.

This option involves adding an input language to your keyboard. It's a one-time setup and allows you to switch between your default keyboard and the United States International keyboard. Rather than provide instructions for each operating system, use the help option to search for instructions.

Search for "add or change input language". Follow directions to add the "United States International" keyboard located within the "English (United States)" keyboard.

Once the keyboard is added, there should be an icon added to your system tray which looks like a small keyboard. This icon allows you to switch between your default keyboard and the US International keyboard. When the language setting is set for "United States - International" you can access most of the special characters as follows:

Hold down the RIGHT ALT key and type	To get		First type " (double quote), then type	To get
a or A	á or Á		u or U	ü or Ü
e or E	é or É		SPACE BAR	"
i or I	í or Í		Note: to type the double quote in your transcript, type the double quote followed by a blank space.	
o or O	ó or Ó			
u or U	ú or Ú			
n or N	ñ or Ñ			
number "1" key	¡			
slash key "/"	¿			

Other character combinations are also available.

- **3rd party software.**

There are several free software applications which may be downloaded to provide easy access to the other character sets, e.g., www.onehourprogramming.com.

- **Use other word processor.**

Alternatively, you may prefer to type the entire transcript in Microsoft Word or some other word processor where other character sets are available. Then, save the transcript as a text file with the extension .SLT. Or, cut/copy and paste the text from Microsoft Word (or other word processor) into the SALT transcript window.

B. French Conventions – E. Thordardottir

Elin Thordardottir, Ph.D., McGill University

1. INTRODUCTION

The coding system presented here was developed by Elin Thordardottir (Elin Thordardottir, 2005). It has been used and further developed in numerous studies on monolingual and bilingual speakers of French, conducted in the Child Language Development and Disorders Lab (directed by Elin Thordardottir), in the School of Communication Sciences and Disorders at McGill University. Normative data are available for young monolingual speakers of Quebec French (Elin Thordardottir, 2005) and further norms on older children are forthcoming (Elin Thordardottir et al., in preparation). The system was originally developed for Quebec French and available normative data have been collected in Quebec. The coding system itself is equally applicable to European varieties of French. However, differences may be expected notably in lexical use and the comparability of MLU values across French-speaking regions is presently unknown.

This French coding system follows SALT conventions in terms of the elicitation and recording of language samples, communicative context, orthographic transcription, utterance segmentation, assignment of

superfluous language into mazes, transcription of unintelligible syllables, the coding of missing elements and error utterances. The English and French systems differ in the particular morphemes that are coded. A greater variety of grammatical morphemes is coded in French.

It should be noted that the French MLU cannot be compared directly to the MLU of English-speaking children of the same age. The French MLU is higher than that of English-speaking age mates. This is because a) French has more grammatical morphemes, and b) the French coding system treats productivity differently than the English system. Morphemes are coded in the French system regardless of evidence of productive use (see discussion in Elin Thordardottir, forthcoming).

2. CODING SYSTEM

The French inflectional system is more complex than the English system. This complexity is reflected in the coding. The following grammatical morphemes are coded in this system:

	TENSE /T_	PERSON /P_	MOOD /M_	NUMBER /_PL	GENDER /_G
NOUNS				plural only /NPL	
ADJECTIVES				plural only /APL	masculine or feminine /AG
PRONOUNS				plural only/PPL	masculine or feminine /PG
VERBS	passé composé /T1 imparfait /T2 futur simple /T3 passé simple/T4 plus que parfait /T5 futur proche /T6 passé antérieur /T7 futur antérieur/T8	correct person agreement /P	imperative/M1 subjunctive/M2 conditional /M3 past participle/M4 present participle/M5	past participle when agreement is required /M4PL or /APL	past participle when agreement is required /M4G or /AG

NOUNS: a code is assigned for use of Number (plural). As in the English SALT conventions, use of the singular is not assigned a code. The code used is NPL (Noun Plural). In French, some nouns assume a different form in the plural, but most nouns do not (e.g. *cheval/chevaux; chat/chats*). The use of the plural is signaled by the change in the article from *un/une* to *des* or from *le/la* to *les*. The article is not coded separately. The article and the noun are together given the code NPL (e.g. *les chevaux/NPL*)

PRONOUNS: a code is assigned for use of Number (plural only, not the singular). French pronouns must also agree with their referent in Gender (feminine or masculine). Neither gender can be considered a more basic form than the other. Pronouns are always assigned a **Gender** code, whether the gender is feminine or masculine, as long as the correct gender form is used. Pronoun codes start with a P for Pronoun, with, in addition, G for Gender and PL for Plural. Examples: *celuici/PG; aucun/PG; quelquesunes/PG/PPL*.

Notes:

- As in English SALT coding, the personal pronouns (*je, tu, il, elle, on, nous, vous, ils, elles*) are not assigned any codes but are treated as different lexical items. This includes personal pronouns in a verb complement position (e.g., *me, te, lui, moi, eux, leur*). These receive no code.
- Gender-neutral demonstrative pronouns (*ce, ceci, cela, ça*) receive no code.
- Reflexive pronouns receive no code (e.g. *se lever*).
- The invariable relative pronoun *qui* receives no code, but the inflected relative pronouns *lequel, laquelle, lesquels, lesquelles, à laquelle, auxquels, etc.* are coded.

- The clitic pronoun (which has received considerable attention in studies on Specific Language Impairment in French) is homophonous with the definite article. It is marked for gender and number as a pronoun. Example: *il le/PG fait/P; je l'/PG ai/P vue/T1/AG; nous les/PG/PPL connaissons/P*
- Two-word pronouns are written as one word (*le mien=lemien, à laquelle=àlaquelle*).
- Many French words are regarded as adjectives when they accompany a noun, and as pronouns when they stand alone (e.g., *chacun, tout, certain*) and are coded accordingly. In cases of doubt, it should be kept in mind that which code is assigned does not affect the MLU. It affects only subsequent analyses of diversity or morphemes used, where it may or may not be considered to be of importance.

ADJECTIVES: as for pronouns, a code is always assigned for correct use of Gender, as adjectives must always agree with their referent in Gender. Number is only coded when the adjective is in the Plural. Adjective codes start with A, with, in addition, G and PL, as appropriate. Examples: *un chat gris/AG; une belle/AG fille; de beaux/AG/APL enfants/NPL*.

Notes:

- The gender and plural marking on pronouns and adjectives can be audible or not depending on the lexical item (example: *vert/verte; gris/grise; rouge/rouge*). The code is assigned regardless of audibility as long as the form used by the speaker is correct given the context (e.g., *un chat gris/AG; une fleur rouge/AG*).
- No plural code is given to adjectives that are inherently plural and have no singular form (e.g. *plusieurs*). Gender is not marked for adjectives whose plural form is invariable for Gender (notably the possessive adjectives *mes, tes, ses*).
- Possessive adjectives (*mon, ma, mes, ton, ta, tes...*) are coded for Gender (e.g. *mon/AG chien*) and Plural (*mes/APL chiens/NPL*), but not for Person (and not for Gender in the plural form, see above).
- Most adjectives are descriptives (*adjectifs qualificatifs*). Other types of adjectives include demonstrative adjectives (*ce, cette, ces*), interrogative adjectives (*quel, quelle*) and indefinite adjectives (*aucun, certain, autre*).

VERBS: Codes are assigned separately for Tense, Person, and Mood. A given verb is assigned one or more of these codes, as appropriate. As in English SALT coding, no tense code is assigned to the present tense and no mood code to the indicative mood. Also, as in English SALT, the infinitive is not assigned a code. All tenses other than the present have their own code that starts with T, followed by a number (see Table). Person agreement is coded independently of Tense, and is denoted by the code P. Different codes can be assigned to the different persons by adding a number to the P code (1st person singular= P1 etc) but this is optional and does not affect the MLU count. Person agreement is coded for verbs in all tenses, including the present. Verb moods are assigned an M code followed by a number (see Table). The indicative mood receives no code, but the imperative, subjunctive and conditional moods do. A verb in the present tense that has person agreement will have a /P code only. A verb in another tense of the indicative, e.g. the passé composé will have a /P and a /T code. A verb in the subjunctive present will have a /P and and /M code. A verb in the past tense of the subjunctive will have an M, T and P code (all these examples assume that each of these inflections are produced correctly – if not, only those that are correct are coded; those that are incorrect receive an error code, such as if the correct tense and person are used, but the indicative is used instead of the subjunctive).

Notes:

- Person marked verbs in French are sometimes homophonous with other verb forms, such as the infinitive, the past participle, the bare stem, or another inflected form of the same verb. The rule here is that any morphemes required by the context are coded if the form used is correct, regardless of whether that form is homophonous with other forms of the verb (that is, whether it can be established unambiguously that the speaker truly intended to use the correct form and did not confuse it with another form).

- Compound tenses consist of an auxiliary and a past participle or infinitive form of the lexical verb. The person agreement appears on the auxiliary form, and the tense is signaled by the combination of the auxiliary and other verb form. These compound forms are treated as a whole and are assigned a P for person agreement and a T code for tense. It does not matter for the MLU count whether the P code is attached to the auxiliary or the lexical verb (e.g. *il a/P donné/T1* or *il a donné/P/T1*). However, attaching the P code to the auxiliary is helpful if further analyses of person agreement are to be performed.
- The specific codes for all the French verb tenses are listed in Table 1. Only a few of these are encountered in the samples of preschool children. The present of the subjunctive and conditional moods may be encountered in samples of old preschool and young school-age children. The subjunctive mood also has a passé, an imparfait and a plus-que-parfait. These are coded by T1, T2 and T5 (the T1 code is used because this past of the subjunctive is a compound tense like the passé composé of the indicative). The conditional mood has a past tense (T1) in addition to the present.

PARTICIPLES: The present participle is encountered fairly commonly (e.g. *sortir en courant, un chien ayant faim*). It is coded as M5.

The past participle of verbs frequently functions as an adjective, and in those instances, it is coded as such in this system (e.g. *une fille endormie/AG; un garçon blessé/AG*). In some cases, it is hard to decide whether a past participle should be treated as an adjective, notably in sentences in which it clearly refers to the action of the verb: example: *des touristes venus de loin; de l'argent trouvé dans la rue*. In such instances, Gender and Number marking can be coded as /M4G and /M4PL if the coder is interested in making a distinction between adjectives and past participles. These instances are rare and whether the form is coded as a past participle or an adjective in no way impacts the MLU count, since the same rules of Gender and Number agreement apply.

In French, the past participle form of compound tense verbs must agree in Gender and Number with its referent under certain circumstances, which are relevant to the use of lexical objects and object clitics (agreement is required: a) always when the auxiliary is the verb *être*, and b) with the verb *avoir* if the direct object is placed before the auxiliary). As for adjectives, the agreement is visible in writing, but is not always audible. However, if the form that is used is correct, the required agreement is always coded. Example: *Il avait/P/ acheté/T5 des pommes et il les/PG/PPL avait/P mangées/T5/AG/APL*. As with any use of the past participle, the agreement of the past participle can be coded as /AG and /APL or alternatively as /M4G and /M4PL, depending on whether the coder is interested in keeping track of the distinction between adjectives and past participles, or more interested in keeping the coding system as simple as possible.

Very young children may use verbs with no subject that could be a past participle or an infinitive (e.g. *tombé!*). These are potentially primitive versions of a passé composé, but given that the auxiliary is not present, such verbs are not assigned a grammatical morpheme code.

OMISSION AND COMMISSION ERRORS

In SALT analysis, omissions are signaled by * such that omitted morphemes receive a */ code specifying the morpheme that was omitted. In this system, verb inflections are considered omitted if the infinitive is used instead of a conjugated form. If, however, an incorrect conjugated form is used, the * code is not assigned. Instead, an error code using brackets ([]) is used. Unlike English, French morphological errors are not overwhelmingly omissions. Therefore, error codes take on more importance than they typically do in English coding.

For nouns, the only possible omission is the use of the singular for the plural (* /NPL). The use of the

plural for the singular is a commission error ([ENN] error noun number).

For adjectives and pronouns, use of the wrong gender is always considered a commission error, since these words cannot have no gender. Incorrect use of the singular and plural is treated the same way as for nouns.

For verbs, omission errors are instances in which the infinitive form is used in the place of a conjugated form. These errors receive the appropriate code preceded by an asterisk (* /P, */T2 etc.). When children inflect a verb incorrectly, an error code in brackets is used instead to indicate the nature of the error.

Common Error Codes: In this system, the tradition is to assign error codes as appropriate that are descriptive of the nature of the error. Depending on errors that are encountered, coders can make up their own codes, as needed. In this system, the following are used:

E = error
 V = verb
 A = adjective
 P = pronoun
 N = noun or number
 VT = verb tense
 VP = verb person
 W = word
 WO = word order

Error codes that are commonly encountered include:

[EVT] incorrect verb tense
 [EVP] incorrect verb person
 [EAG] incorrect gender of adjective
 [EPG] incorrect gender of pronoun
 [ENN] incorrect number of noun (plural for singular)
 [EW] incorrect choice of word
 [EWO] incorrect word order

Other codes are formed in an analogous manner as needed.

TABLE 1: BOUND MORPHEME CODES

/T1	passé composé (present perfect) <i>j'ai mangé</i>
/T2	imparfait (imperfect) <i>je mangeais</i>
/T3	futur simple (future) <i>je mangerai</i>
/T4	passé simple (simple past) <i>je mangeai</i>
/T5	plus-que-parfait (past perfect) <i>j'avais mangé</i>
/T6	futur périphrastique (periphrastic future) <i>je vais manger</i>
/T7	passé antérieur, <i>j'eus mangé</i>
/T8	futur antérieur, <i>j'aurai mangé</i>
/P	verb person marking <i>je mange, tu manges etc</i>
/M1	impératif (imperative mood) <i>mange!</i>
/M2	subjunctive mood) <i>je ne veux pas que tu manges, il faut que tu le saches</i>
/M3	conditionnel (conditional mood) <i>si j'avais faim, je mangerais</i>
/M4	past participle, <i>des plats mangés de tous; des touristes venus de loin</i>
/M5	present participle, <i>en mangeant</i>
/PLN	noun plural, <i>les oiseaux, les voitures</i>
/APL	adjective plural, <i>les belles choses, des livres intéressants</i>
/PPL	pronoun plural <i>toutes les personnes</i>

/AG	adjective (and past participle) gender agreement <i>la voiture grise, le gentil voisin</i>
/PG	pronoun (and clitic) gender agreement <i>je la connais, chacun des hommes</i>

TABLE OF SPELLING CONVENTIONS

Many French phrases and expressions are written as two or more words, but are felt to be a single entity by speakers of French. Accordingly, and consistent with English SALT rules, such words are consistently spelled as one word and counted as one lexical item. The following table lists many commonly encountered words of this type. This table was compiled over many years of coding large numbers of samples. However, it is not exhaustive. If additional multi word entries are encountered that are analogous to the words in this table and should be spelled as one word based on similar principles, then they should be treated as the words in this table.

à cause	àcause		en train de	entrainde
à côté	àcôté		est-ce	que, estceque
ah ben	ahben		fait que	faitque
à la place	àlaplace		il ya a	ilya, coded ilya/P
à laquelle	àlaquelle (and all its forms)		il y avait	coded ilya/P/T2
à terre	àterre		il y en a	coded ilya/3 en
aujourd'hui	aujourdhui		là bas	làbas
Bob l'éponge	bobléponge		là dedans	làdedans
Burger King	burgerking		le mien	lemien
bye bye	byebye		n'importe qui	nimportequi
celui-là	celuilà (and all its forms)		oh là là	ohlàlà
je sais pas	chépas (when pronounced as chépas)		parce que	parceque
coup de pied	coupdepied		par terre	parterre
coup de poing	coupdepoing		peut être	peutêtre
d'abord	dabord		quleque chose	quelquechose
d'accord	daccord		quelqu'un	quelquun
de même	demême		qu'est-ce que	questceque
en arrière	enarrière		qui est-ce qui	questcequi
en bas	enbas		s'il vous plaît	silvousplaît
en dedans	endedans		toutà coup	toutàcoup
en dessous	endessous		tout de suite	toutdesuite
en dessus	endessus		tout le monde	toutlemonde
en haut	enhaut		un deux trois go	undeuxtroisgo
en l'air	enlair			

Notes:

pour que is written in two words

The pronoun *il* is often pronounced as *i*. This can cause ambiguity, which must be resolved using the context. Examples:

<i>y'a du monde</i>	ilya/P du monde
<i>y'a pris une boîte</i>	il a/P pris/T1 une boîte
<i>y'en a deux</i>	ilya/P en deux {= il y en a deux}
<i>y'en a pris deux</i>	il en a/P pris/T1 deux

3. REFERENCES

Elin Thordardottir (forthcoming). Typical development and Primary Language Impairment in monolingual French-speaking children. In J. Patterson and B. Rodriguez (Eds.), *Multilingual*

perspectives on child language disorders. Multilingual Matters.

Elin Thordardottir(2005). Early lexical and syntactic development in Quebec French and English:

Implications for cross-linguistic and bilingual assessment. *International Journal of Language and Communication Disorders*, 40,243-278.

c. Identifying the Root Form of Verbs and Other Inflected Words

Procedure

- The root identification convention “|” instructs SALT to consider the word immediately preceding the “|” as the main body word and the word immediately following to be the root word (infinitive verb). It is the root word that is used for calculating measures such as NDW (number of different words) and TTR (type-token ratio). Examples: *j'ai|avoir, nous avons|avoir*. The use of *|avoir* ensures that both forms *ai* and *avons* are considered to belong to the verb *avoir*
- An automatic root identification file is in place in SALT for French verbs. For other inflected words, this information needs to be typed in the sample
- Auxiliary verbs and main verbs are both followed by the root identification “|” convention.

Automating Root Identification of Verbs

The root identification file (RIF), French Verbs, contains almost 264,000 verbs with their corresponding root forms and is selected using the *Setup Menu: Language Settings* option. The *Edit Menu: Identify Roots* command looks up all verbs in the transcript that have not been previously identified with the vertical bar. If the verb is not found in the active RIF, that verb is ignored. If only one choice is found, the verb is automatically identified. If a verb contains more than one root option, the user is presented with a list of choices to select from. You should use this automation feature to identify all the verbs in your transcript.

Use of the | Convention with Other Word Classes

The root of French words may change in different inflected forms, including nouns (*cheval, chevaux*), pronouns (*lequel, laquelle*), and adjectives (*beau, belle; vert, verte*). Words that occur more than once in a sample with different root forms must be coded with | followed by a consistent form of the word to ensure that the lexical count does not treat two inflectional forms of the word as different lexical items. Examples: *un cheval, des chevaux|cheval/NPL*. For consistency, the form following the vertical bar | is the singular form of nouns, the masculine form of adjectives and pronouns (which does not, however, presuppose that the masculine form is more basic, only frequently shorter) and the infinitive form of verbs.

Note: Not using the “|” convention has no effect on MLU (mean length of utterance) or NTW (number of total words), but it does impact NDW, the number of different words. The “|” doesn’t need to be used if you aren’t interested in these measures and other measures based on identifying the root form.

Summary of SALT Transcription Conventions: For Written Language



<p>Misspellings [S]</p> <p>Mark misspellings for analysis of vocabulary, language and spelling skills.</p>	<p>[S]- spelling error Misspelling correct spelling[S] Example: <i>Forg</i> <i>frog</i>[S]</p> <p>[S] [EW:___] spelling and word form error Example: <i>Baite</i> <i>bite</i>[S][EW:bit]</p> <p>Spelling error and omitted bound morpheme Example: <i>Lok</i> <i>look/*ed</i>[S]</p> <p>Spelling error with correct morpheme Example: <i>Cyring</i> <i>cry/ing</i>[S]</p> <p>Spelling and overgeneralization error Example: <i>Teled</i> <i>tell</i>[S][EO:told]</p> <p>Non-grapheme symbol (unidentifiable) Example: <i>frXg</i> <i>frog</i>[S]</p> <p>Code switch with (Spanish) misspellings Example: <i>The abehas</i> <i>abeja/s</i>[S] <i>chase/ed the boy</i> [CS].</p>
<p>Upper/lower case errors [IC]</p> <p>Incorrect use of upper case or lower case letters [IC]</p>	<p>Obligatory capitalization, e.g., proper pronouns or beginning of utterances Wrote: <i>the frog was gone.</i> Transcribed: <i>the</i>[IC] <i>frog was gone.</i></p> <p>Use of capital letters in middle of word. Wrote: <i>He rAn home.</i> Transcribed: <i>He rAn</i>[IC] <i>home.</i></p>
<p>Letter reversals</p>	<p>Type correct grapheme assuming they are developmentally appropriate. Create custom code to analyze this feature, if desired.</p>

<p>Punctuation [PN]</p> <p>Mark missing, incorrect, and/or extraneous punctuation. Do not insert commas and quotations even if obligatory.</p>	<p>[PN] – punctuation error Missing end of utterance punctuation Insert code at end of utterance followed by appropriate punctuation. Wrote: <i>The frog jumped</i> Transcribed: <i>The frog jump/ed [PN].</i></p> <p>Incorrect punctuation Type the writer’s punctuation in the code followed by correct punctuation outside of bracket. Wrote: <i>Where are they.</i> Transcribed: <i>Where are they [PN.]?</i></p> <p>Extraneous punctuation mark Insert the [PN] code, including punctuation produced, at location of extra punctuation. Wrote: <i>He said. to go away.</i> Transcribed: <i>He said [PN.] to go away.</i></p>
<p>Word Punctuation [WPN]</p>	<p>[WPN]- word punctuation error Missing word-level punctuation Wrote: <i>The girls coat was red.</i> Transcribed: <i>The girl[WPN’]s girl/z coat was red.</i></p>
<p>Numbers</p>	<p>Type numbers as they were written. Example: <i>8 or eight</i></p>
<p>Sound effects</p>	<p>Type as they were written</p>
<p>Extra Space [XSP]</p>	<p>Extra space within written word. Wrote: <i>honey moon</i> Transcribed: <i>honey[XSP]moon</i></p>
<p>Space Required [SPR]</p>	<p>Space required within written word. Wrote: <i>theyare</i> Transcribed: <i>they [SPR] are</i></p>

C-Unit Segmentation Rules



The analysis of oral language samples requires recorded speech to be segmented or divided into units. There are a few different approaches to segmenting utterances, such as phonological units, T-units, and C-units. This document describes the rules for segmenting utterances into Communication Units (C-units), a rule-governed and consistent way to segment utterances.

Disclaimer: There is variation in the literature on how to segment utterances into C-units. All of the samples in the English SALT reference databases were segmented into C-units following the rules in this document. If you intend to compare your sample with samples selected from these databases, you should segment utterances following the same rules.

Definitions

- C-Unit
The formal definition of a C-unit is “an independent clause with its modifiers”. It includes one main clause with all subordinate clauses attached to it. It cannot be further divided without the disappearance of its essential meaning.
- Clause
A clause, whether it is the main clause or a subordinate clause, is a statement containing both a subject and a predicate. Grammatically, a subject is a noun phrase and a predicate is a verb phrase.

Segmenting Utterances into C-Units

Main clauses can stand by themselves and can be segmented into one C-unit. Subordinate clauses **DEPEND** on the main clause to make sense. They cannot stand alone or be separated from the main clause. So a C-unit will either consist of a main clause or a main clause with its subordinating clause(s). The following examples are broken down into main and subordinate clauses. The main clause is bolded and the subordinate clauses are underlined.

The canary was perched on a branch when the man approached him.
Anastasia was angry with her mother because she didn't get to buy a toy.
When the boy looked in the jar **he saw** that the frog was missing.

Notice the subordinate clauses cannot stand alone, or are incomplete, without the main clause. Thus, they are not separated (segmented further) from the main clause. Each of the above utterances consists of one C-unit and would be transcribed as:

- C The canary was perched on a branch when the man approach/ed him.
- C Anastasia was angry with her mother because she did/n't get to buy a toy.
- C When the boy look/ed in the jar, he saw that the frog was missing.

Coordinating and Subordinating Conjunctions

When segmenting into C-units it is important to understand the different types of conjunctions which are used to link clauses. There are *coordinating* conjunctions and *subordinating* conjunctions.

- Coordinating Conjunctions

The segmenting rule is simple when utterances contain coordinating conjunctions. These conjunctions link two main clauses which should be separated/segmented into two utterances (or two C-units) that can each stand alone. Common coordinating conjunctions include: and, but, so (not “so that”), and then, then.

Example 1:

C The frog was sit/ing on a lily pad.

C And then it jump/ed in.

Example 2:

C He had to catch the frog.

C Or the waiter would make them leave.

Example 3:

C He climb/ed up on the branch/s.

C But they were/n't branch/s.

Example 4:

C My aunt gave me money for my birthday.

C So I use/ed it to buy some new jeans.

- Subordinating Conjunctions

Subordinating conjunctions link a main clause and a subordinate clause. A C-unit includes the main clause with all subordinate clauses attached to it. The following are examples of subordinating conjunctions:

Early Development: because, that, when, who

Later Development: after, before, so (that), which, although, if, unless, while, as, how, until, as__as, like, where, since, although, who, before, how, while

Examples 1:

C He went to the store because he was out of milk.

Example 2:

C When the boy saw it, the frog jump/ed.

Example 3:

C The man, who usually come/3s to my exercise class, was/n't there today.

Example 4:

C We can/'t find my cat who always run/3s away.

- “because” and “so”

Always consider “because” as a subordinating conjunction. It will not start an utterance unless:

A) It is preceded by the utterance of another speaker as in this example:

- C I like/ed the movie alot.
- E Why did you like it?
- C Because it was really funny.

OR

- B) The subordinating clause is the first clause in the utterance as in this example:
 - C Because my mom was so mad, I did my homework first thing after school.

The word “so” can either be a coordinating conjunction or a subordinating conjunction. If its usage means “so that”, it is a subordinating conjunction. Otherwise it is a coordinating conjunction.

Example 1 (“so” used as a coordinating conjunction):

- C He had to go home.
- C So we could/n’t go to the game.

Example 2 (“so” used as a subordinating conjunction):

- C He had to go home so his mom could take him to the dentist.

Other rules for segmenting C-units

- Sentence fragments

Sentence fragments are counted as separate C-units when the final intonation contour of the utterance indicates that a complete thought has been spoken. For example:

- C The boy, the dog, and the frog, they were friend/s.
- Versus
- C The boy, the dog, and the frog. {fragment based on intonation}
- C They were friend/s.

- Elliptical responses

Elliptical responses (sentence fragments) to questions or prompts from the examiner are counted as separate C-units. For example:

- E What did you do next?
- C Shop/ed.

- Yes/No responses or affirmations

If a question or intonation prompt is posed, segment the yes/no response from the subsequent utterance when succeeded by a complete utterance/c-unit. Examples:

- E Is that the Spanish teacher?
- C No.
- C That/'s my science teacher.

E Do you want to read your book now?
C No.
C I don't.

E Do you have any pet/s?
C Yeah.
C I have a dog.

If a Q or intonation prompt is posed, do *not* segment the Y/N response to stand alone when followed by an incomplete utterance/c unit.

E Do you have any pet/s?
C Yeah, a dog.

If an utterance begins with an affirmation or starter, and does not follow a question or ~ prompt, do not segment the affirmation/starter from the subsequent words.

E I like dog/s.
C Yeah I do too.
E That sound/s interesting.
C Yeah it was.
C It was really fun.
C Yeah we had such a great time.

- Tags

Do not segment phrases such as “you know”, “I guess”, and “I mean” when they are used as tags. For example:

C He/'s gonna live with his dad, I guess.
C And then, you know, they were go/ing to this town.

- Questions as Tags

Do not segment questions when they are used as tags. For example:

C They got in trouble, right?
C He miss/ed the bus, did/n't he?

- Dialogue Complement/Complement

Dialogue quotes which are embedded in, or as part of, an utterance are counted as one C-unit as in this example:

C And the boy said, “That/'s my frog”.

Successive main clauses that occur in dialogue quotes are counted as separate C-units. For example:

C And he said, “I/'m ready” .
C “I want to go to the store now” .

Complement:

- C She thought, "Sam was incorrect".
- C He realize/ed, nothing has changed.

- Grammatical errors

Ignore grammatical errors when segmenting utterances. For example,

- C They is[EW:are] go/ing now.
{child said, "They is going now."}
- C We *are go/ing too.
{child said, "We going too."}

- Pauses and intonation

Do not ignore pauses and intonation when segmenting utterances but, whenever reasonable, segment utterances based on grammar rules. When listening to speech, for example, there is sometimes a significant pause (with or without ending intonation) between a main clause and a subordinate clause. This inclines one to segment the utterance. With C-unit segmentation, however, the utterance would not be segmented as in this following example where the speaker paused for two seconds between the main clause and the subordinate clause:

- C I like/ed the movie alot :02 because it was really funny.

In the following example, however, consider pause time and intonation:

- C I like/ed the movie alot.
- : :02
- E Mhm.
- C Because it was really funny.

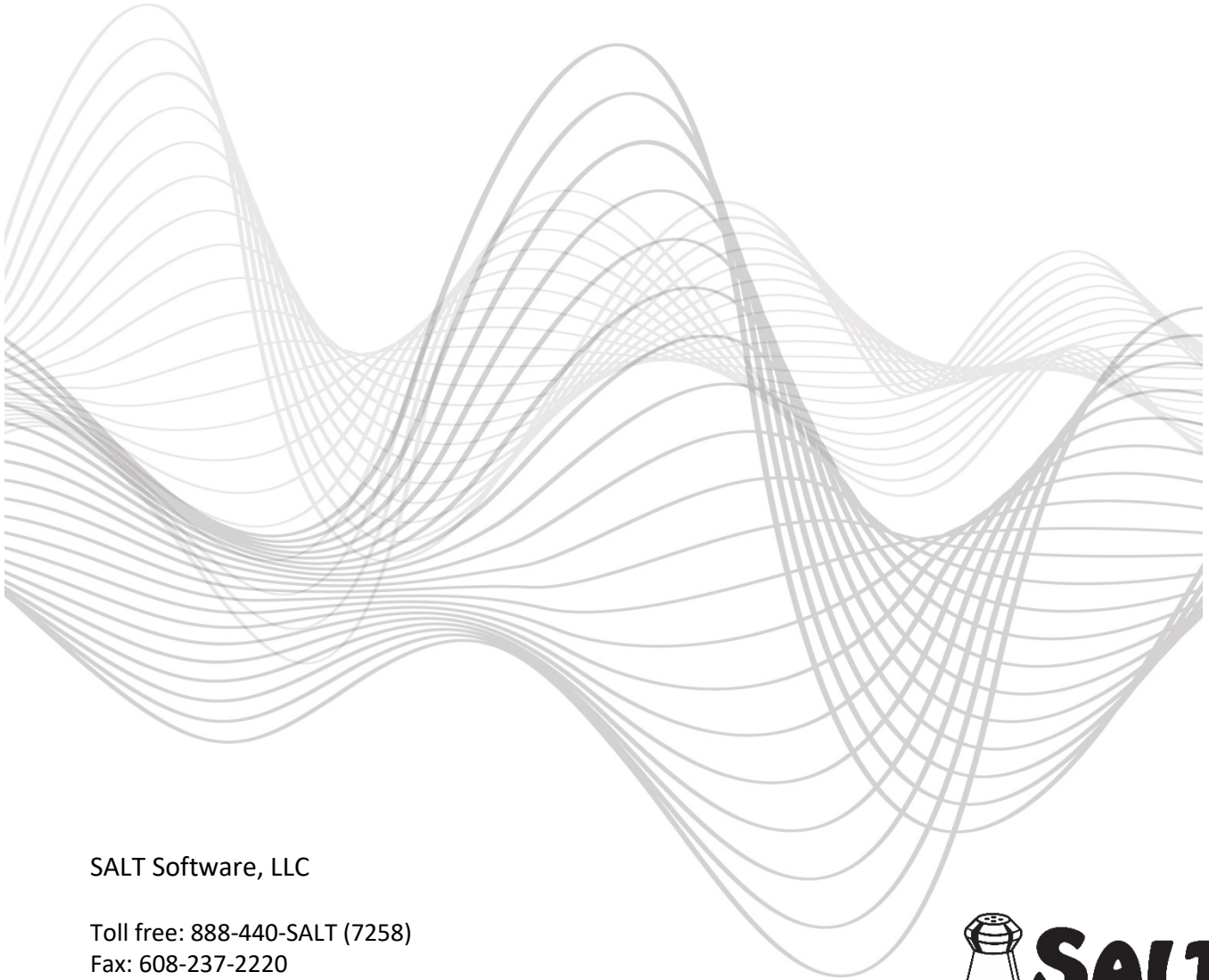
If there is a significant pause and ending intonation (falling for statements, rising for questions) between the speaker's first utterance and the examiner's "Mhm", segment the utterances as show above. Otherwise, give the speaker credit for subordination and transcribe these "prompt sounds" as interjections as follows:

- C I like/ed the movie alot :02 < > because it was really funny.
- E <Mhm>.

References:

The rules for C-unit segmentation were summarized from Hughes, McGillivray, and Schmidek (1997), Loban (1976), Strong (1998), and Jon Miller's class notes from Communicative Disorders 640, Fall, 1999.

Using SALT to Assess Errors



SALT Software, LLC

Toll free: 888-440-SALT (7258)

Fax: 608-237-2220

support@saltsoftware.com

www.saltsoftware.com



Using SALT to Assess Errors

Speakers make different types of errors, some of which are captured using the standard conventions, e.g., omitted words or bound morphemes, repeated or revised segments. There are other errors, however, for which there isn't a standard convention, e.g., overgeneralization errors, subject-verb agreement errors, incorrect pronoun use, incorrect word choices. These errors are captured through the use of error codes. The focus of this document is on the use of error codes.

A. Default Error Code List

There is a special category of codes called "error codes". The five codes listed in this section, [EO:=], [EP:=], [EW:=], [EW], and [EU], are the default error codes (*note that the equal sign in these codes is a placeholder matching any 1 or more characters*). This list of codes, which SALT recognizes as error codes, can be changed to suit your needs using the *Setup menu* → *Lists* → *Current Code Lists* option. The following error codes are used consistently when transcribing samples for the reference databases.

- [EO:word]

This is a word-level error code used to mark overgeneralization errors. The correct word is put inside the brackets following a colon. There is no space between the word and the code. Consider the following utterances which all contain overgeneralization errors with the root form of the word identified using the vertical bar and the [EO] code attached to the end of the word:

- 1) C He falled|fall[EO:fell].
- 2) C There were deers|deer[EO:deer] in the woods.
- 3) C That/'s hises|his[EO:his] wife.
- 4) C The next day the boy woked|wake[EO:woke] up.
- 5) C Then the dog droppeded|drop/ed[EO:dropped] the bee_hive.

In examples 1 – 4 the overgeneralized words are identified with the root form of the word. Notice that the bound morphemes in these words are not marked because we don't want to give the child credit for an incorrectly-used bound morpheme. In example 5, however, the child is given credit for the first correctly-used bound morpheme but not for the second incorrectly-used bound morpheme (*notice that the bound morpheme is slashed in the word following the vertical bar rather than in the overgeneralized form*).

- [EP:word]

This is a word-level error code used to mark pronoun errors. The correct word is put inside the brackets following a colon. There is no space between the word and the code. The samples in the SALT reference databases used the [EP] code to mark errors with personal pronouns, possessive pronouns, and reflexive pronouns. Consider the following utterances which all contain pronoun errors with the root form of the word identified using the vertical bar and the [EP] code attached to the end of the word:

- 1) C Dr_De_Soto worked with her[EP:his] wife.
- 2) C Him[EW:he] look/ed everywhere.
- 3) C That/'s ours[EP:our] car.
- 4) C She did it by herself[EP:herself].

- [EW:word]

This is a word-level error code used to mark other words which are used incorrectly for which you know the intended word or part of speech. The correct word, if known, is put inside the brackets following a colon. There is no space between the word and the code. Examples:

- 1) C The big frog were[**EW:was**] mad.
- 2) C He check/ed on[**EW:in**] the boot.
- 3) C The boy was find/ing[**EW:looking**] for him.

- [EW]

This is a word-level error code used to mark extraneous words. There is no space between the word and the code. Examples:

- 1) C And then the boy is a[**EW**] sleep/ing.
- 2) C Then the kid climb/ed a rock to see more[**EW**] better.
- 3) C And they were[**EW**] have nine baby/s.
- 4) C The boy was in[**EW**] mad.
- 5) C And after that the boy that[**EW**] climb/ed the tree.

- [EU]

This is an utterance-level error code used to mark errors which cannot be associated with a specific word. It alerts the user to an utterance that would need more detailed analysis later. Look at the examples and notice that the [EU] code is inserted between the last word and the ending punctuation mark. Examples:

- 1) C And they came to stop/ed [**EU**].
- 2) C They scream for everywhere [**EU**].
- 3) C He was have/ing a frog [**EU**].
- 4) C He was a tree [**EU**].

The [EU] code is also used when there are too many things to fix by marking omissions and/or word errors.

B. Using the SALT Editor to Insert the Error Codes in your Transcript

Error codes are typically inserted when transcribing the sample, as opposed to going back and inserting them later. You may find it easiest to just type in the error codes since most of them require inserting the correct form as part of the code, e.g., was[EW:were].

The SALT editor, however, contains an option for selecting the error code from a list. Select *Edit menu: Insert Code* to bring up the dialogue box “Code Lists Used to Facilitate Inserting Codes in a Transcript”. At the bottom left of the dialogue box, check the “Error Codes” option. The default codes are listed. The code list can be changed, or customized, and saved for future use if desired. After accepting the default list of codes, or customizing your own set of codes, click OK in the upper right corner of the dialogue box. The “Select code to be inserted” dialogue box is displayed. You are provided with options for the position of the codes. They can be inserted at the point of the cursor in the transcript, at the beginning of a word, at the end of a word, or at the end of an utterance.

C. Using SALT to Analyze the Error Codes

There are several analyses where the error codes are identified separately from the other codes in the transcript. These analyses include:

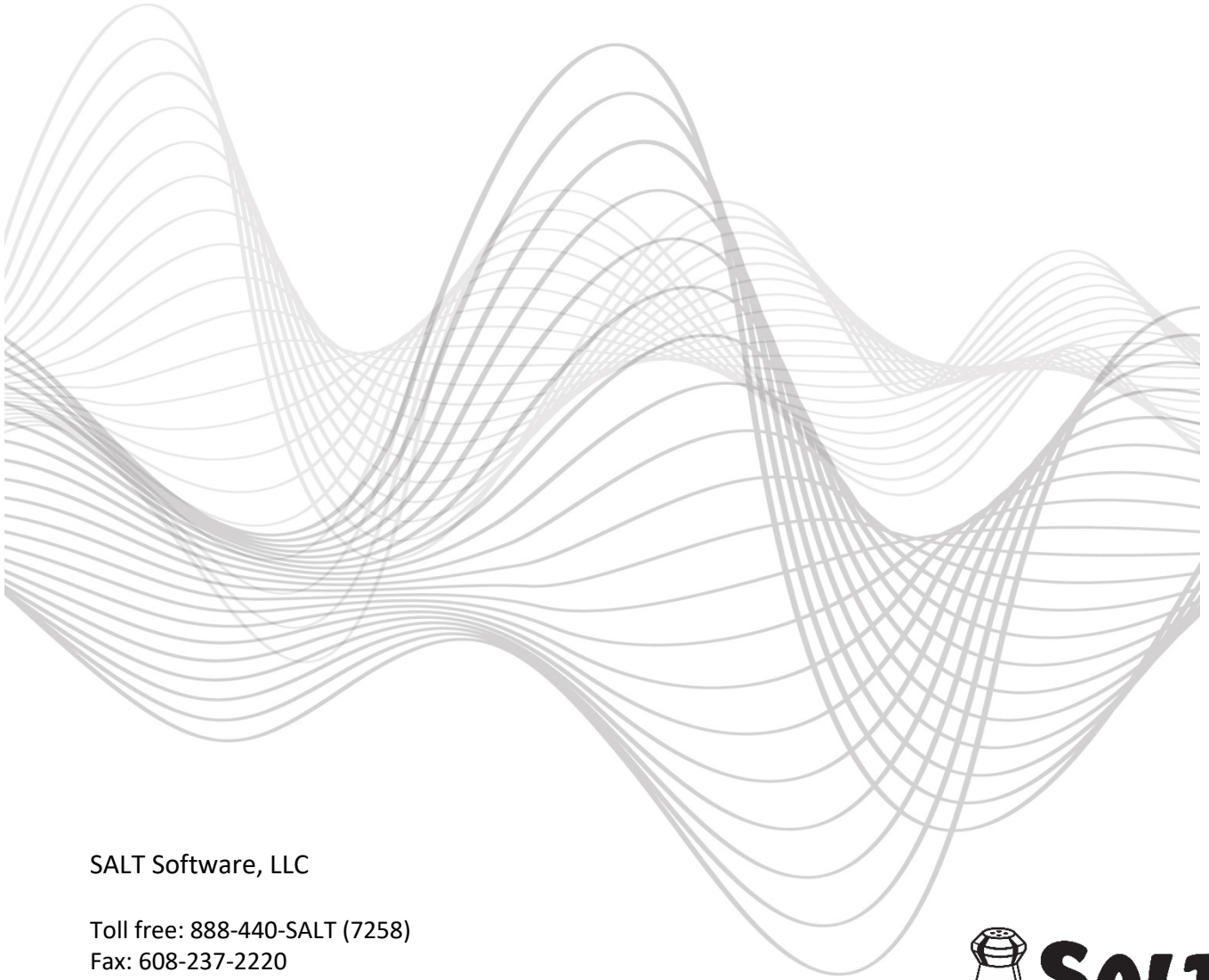
Analyze menu

- Standard Measures Report: includes the variables *% Utterances with Errors* (also includes omissions) and *Number of Error Codes*.
- Errors Summary: includes the variables *% Utterances with Errors* (also includes omissions) and *Number of Error Codes* (lists counts for each error code found in the transcript).
- Omissions and Error Codes: lists all error codes with counts and utterances containing them.
- Standard Utterance Lists: lets you select *Utterances with ... Error Codes*.
- Word Code Tables: lets you restrict the selection of word codes to *Error codes*.
- Utterance Code Tables: lets you restrict the selection of utterance codes to *Error codes*.

Database menu: the reference databases included with the software have all been coded for errors.

- Standard Measures Report: includes the variables *% Utterances with Errors* (also includes omissions) and *Number of Error Codes*.
- Errors Summary: includes the variables *% Utterances with Errors* (also includes omissions) and *Number of Error Codes* (lists counts for each error code found in either the transcript or the database samples).

Using SALT to Assess Fluency



SALT Software, LLC

Toll free: 888-440-SALT (7258)

Fax: 608-237-2220

support@saltsoftware.com

www.saltsoftware.com



Using SALT to Assess Fluency

The coding scheme described in this document was specifically designed to mark speech disfluencies. The coding can be applied to an existing transcript, previously coded for oral language production, or a speech sample can be elicited for the sole purpose of assessing fluency. These fluency codes are flexible in nature. They can be general, just marking the occurrence of a disfluency, or further defined to add more detail. In addition to fluency codes, concomitant behaviors can be indicated on plus lines inserted at the end of the transcript.

A. Fluency Codes

Default codes to mark disfluent speech production

SALT contains a default list of fluency codes which may be edited to suit your purposes. They include:

- [FL] used to mark any unspecified type of disfluency
- [FLR] used to mark repetitions
- [FLP] used to mark prolongations
- [FLB] used to mark silent blocks

Coding Unspecified Types of Disfluencies - [FL]

The insertion of the [FL] code can be used to highlight any type of disfluent production and will be tallied in analysis to provide the frequency of occurrence.

- [FL] used to mark disfluent *utterances*. Insert the code [FL] at the end of any utterance containing one or more disfluencies. The fluency report will count and display the coded utterances.
- [FL] used to mark disfluent *words*. Insert the [FL] code at the end of each disfluent word. When the [FL] code is attached to a word, with no space between the word and the code, the code indicates the presence of some type of disfluent behavior associated with that word. The fluency report will count and display the coded words with the option of also including the utterances.

Applying the code [FL] at the word or utterance level provides only the number of words or number of utterances in the sample that contained disfluencies. Using further defined codes will generate more specific results in analysis.

Coding the Type of Disfluency – [FLR], [FLP], [FLB]

The default set of codes for SALT's fluency analysis were developed to mark repetitions, prolongations, and silent blocks. These speech disfluencies occur at the sound, syllable, or whole-word level and are marked in the transcript using word codes, i.e., codes the disfluent words.

Basic Coding

Basic coding involves inserting one or more codes at the end of each disfluent word within the SALT transcript. This coding option is a fast method of tallying the number and types of disfluencies produced in the language sample.

Examples:

C My[FLR] mom was really angry.	Repeated some or all of the word
C She like/3s banana/s[FLP].	Prolonged some part of the word
C She is funny[FLB].	Silent block at the beginning or in middle of the word
C The boy woke[FLR][FLP] up.	Sound or whole word repetition followed by prolongation.

This *basic* level, inserting codes at the end of each word, does not distinguish the position of the disfluency within the word in analysis. Nor does this level of coding indicate the number of repetitions produced or the length of a prolongation or block.

Should a more detailed description be of interest, these codes can be positioned and/or expanded to provide further information as described in the following sections.

Indicating Position within the Word

Inserting fluency codes at the position of the disfluency provides additional documentation. The fluency report will count the codes and display the specific words with their positional codes.

- **Repetitions:** insert the code immediately before the repeated sound or syllable. If the entire word is repeated, insert the code at the end of the word. For example,

C She like/3s [FLR]banana/s.	Repeated the initial sound /b/ or syllable /ba/
C She like/3s ba[FLR]nana/s.	Repeated the medial sound /n/ or syllable /na/
C She is funny[FLR].	Repeated the whole word

Distinguishing between repeated sounds and syllables

Notice, in the first two examples, that it may not be evident whether the positional code is marking a sound or a syllable. If you wish to distinguish between sounds and syllables for repetitions, expand the fluency codes by adding “Snd” for sound and “Syl” for syllable, i.e., [FLRSnd], [FLRSyl]. For example,

C She like/3s ba[FLRSnd]nana/s.	Repeated the sound /n/
C She like/3s ba[FLRSyl]nana/s.	Repeated the syllable /na/

- **Prolongations:** insert the code immediately before the prolonged sound or syllable. For example,

C She is [FLP]funny.	Prolonged the initial sound /f/
C She like/3s ba[FLP]nana/s.	Prolonged the sound /n/
C She like/3s ban[FLP]ana/s.	Prolonged the sound /a/
C She like/3s banana/[FLP]s.	Prolonged the final sound /s/

- **Silent blocks:** insert the code at the position of the block. For example,

C She is [FLB]funny.	Silent block at beginning of sound/word
C She is fun[FLB]ny.	Silent block in middle of the word, between the syllables

Adding Number of Repetitions

When coding repetitions, you may want to indicate the number of repetitions. To do this, expand the repetition code by adding a colon followed by a number representing the number of extra repetitions. For example,

- C The [FLR:4]boy is chase/ing the dog.* Repeated the initial sound /b/ four extra times
C The boy[FLR:2] is chase/ing the dog. Repeated the word “boy” two extra times
C She like/3s ba[FLR:4]nana/s. Repeated the sound /n/ or the second syllable /na/ four extra times

Note, in this last example, that you could differentiate between sounds and syllables by adding “Snd” for sound and “Syl” for syllable, i.e., [FLRSnd:4], [FLRSyl:4].

Adding Length of Prolongations and Blocks

When coding prolongations and silent blocks, you may want to indicate their duration. Note that the duration may be measured in a variety of ways, e.g., seconds, milliseconds, numeric scale. The duration doesn’t have to be numeric. You may want to use a scale such as L=long, M=medium, and S=short. If you choose to include duration, just be consistent in how you measure it within and across your data sets. In the examples which follow, duration of prolongation is measured in number of seconds.

- C There are [FLP:04]many people.* Initial sound/syllable was prolonged for 4 seconds
C The kangar[FLP:05]oo was funny. Final sound was prolonged for 5 seconds
C He like/3s [FLB:03]banana/s. 3-second silent block at beginning of word

Using the SALT editor to insert the codes in your transcript

Select *Edit menu: Insert Code* to bring up the dialogue box “Code Lists Used to Facilitate Inserting Codes in a Transcript”. At the bottom left of the dialogue box, check the “Fluency Codes” option. The default codes are listed. The code list can be changed, or customized, and saved for future use if desired. After accepting the default list of codes, or customizing your own set of codes, click OK in the upper right corner of the dialogue box. The “Select code to be inserted” dialogue box is displayed. You are provided with options for the position of the fluency codes. The codes can be inserted at the point of the cursor in the transcript, at the beginning of a word, at the end of a word, or at the end of an utterance.

B. Concomitant Behaviors

Concomitant behaviors are secondary, or accessory, behaviors that can accompany disfluency in speech production. They vary from person to person. These characteristics are best rated at the time of elicitation, directly after, or from a video recording of the speech-language sample. Rather than code concomitant behaviors in the transcript at the point(s) where they occur, these behaviors are marked using plus lines inserted at the end of the transcript. The suggested coding is divided into the following five categories:

- **Vocal quality** such as pitch rise, vocal tic, change in volume (louder/softer), change in rate (faster/slower)
- **Grimace (facial)** such as jaw jerk, tongue protrusion, lip press, squinting, tremor of lips or face

- **Eye movement** such as avert eye gaze, close eyes, blink eyes
- **Distracting sound** such as fast or shallow breathing, sigh, whistle, blow (*air*), click, laugh, clear throat
- **Movement of extremities** such as arm movement, hand movement, hands around face, finger movement, shrug shoulders, clap, nod, shake, jerk

Using the SALT editor to insert the plus line template at the end of the transcript

Select *Edit menu* → *Insert Template* → *Fluency Concomitant Behaviors* to insert the following plus lines used to rate these five concomitant behavior categories:

- = Concomitant Behaviors
- + Vocal Quality:
- + Grimace:
- + Eye Movement:
- + Distracting Sound:
- + Movement of Extremities:

Each category is rated on a 0-3 scale as follows:

- 0 = does not occur
- 1 = LOW frequency of occurrence
- 2 = MEDIUM frequency of occurrence
- 3 = HIGH frequency of occurrence

C. Using SALT to Analyze the Fluency Codes and Behaviors

There are several analyses where the fluency codes are identified separately from the other codes in the transcript. These reports are useful, not only for initial evaluations, but additionally to track therapy progress or changes in fluency behaviors over time and/or contexts.

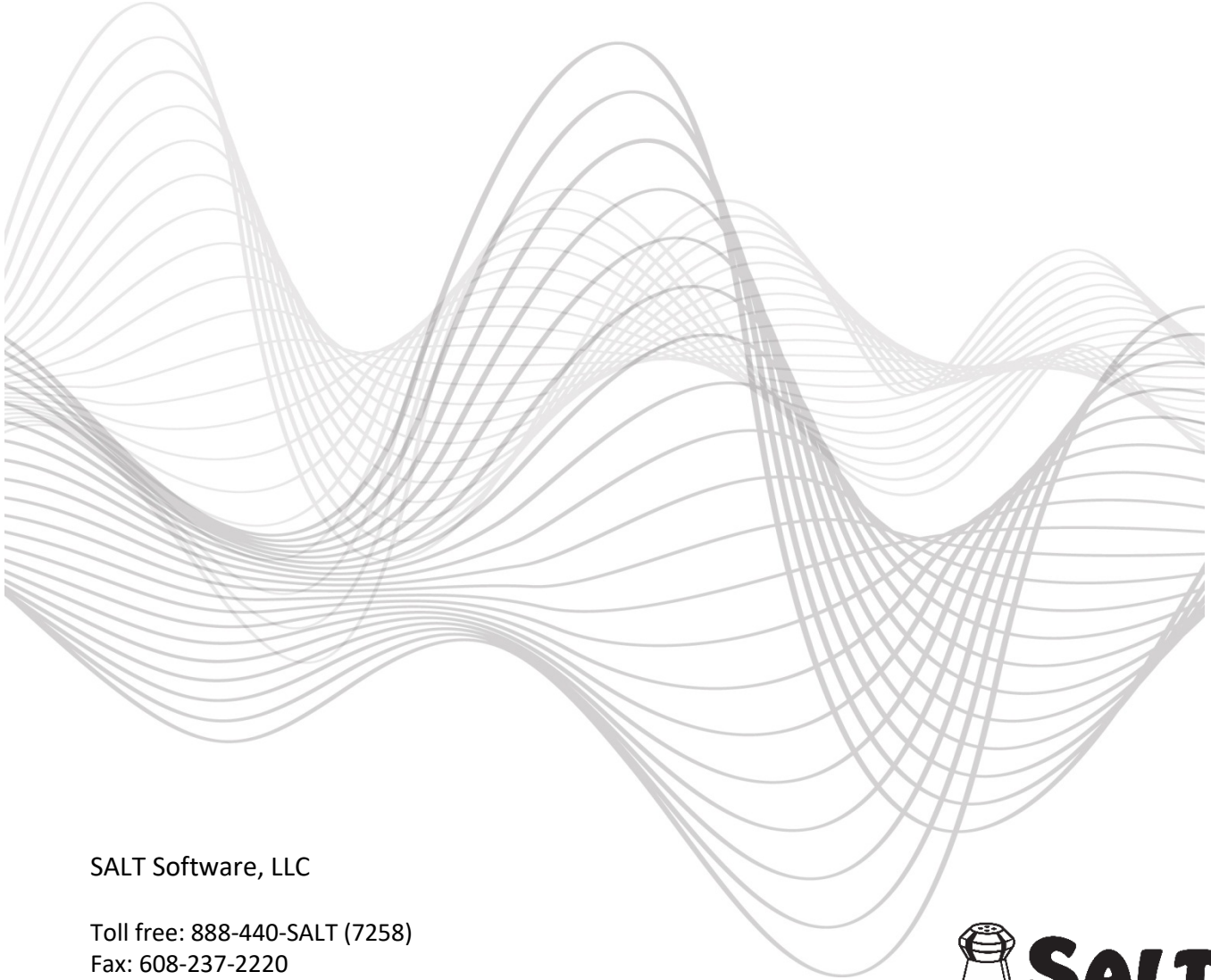
Analyze menu

- Standard Measures Report: includes the variable *% Utts with Fluency Codes*.
- Verbal Facility Summary: includes the variables *% Utts with Fluency Codes* and *Number of Utts with Fluency Codes*.
- Standard Utterance Lists: lets you select *Utterances with ... Fluency Codes*.
- Word Code Tables: lets you restrict the selection of word codes to *Fluency codes*.
- Utterance Code Tables: lets you restrict the selection of utterance codes to *Fluency codes*.
- Fluency Codes and Behaviors: provides detailed information on the number and types of disfluent productions within the sample.

Database menu: the reference databases included with the software have not been coded for fluency. If you compare your sample with samples selected from these databases, the fluency variables are included but the database values are left blank.

- Standard Measures Report: includes the variable *% Utts with Fluency Codes*.
- Syntax/Morphology Summary: includes the variables *% Utts with Fluency Codes* and *Number of Utts with Fluency Codes*.

Using SALT to Assess Nonmainstream Forms



SALT Software, LLC

Toll free: 888-440-SALT (7258)

Fax: 608-237-2220

support@saltsoftware.com

www.saltsoftware.com



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Using SALT to Assess Nonmainstream Forms

Coding nonmainstream forms, e.g., those which occur within AAE or SWE dialects, can be used to highlight the number and type of forms used. Nonmainstream-form codes serve to expand the analysis to options beyond the standard SALT transcript conventions. These codes are flexible in nature. They can be general, just marking the occurrence of a nonmainstream form, or further defined to add more detail.

A. Default Code List

There is a default list of nonmainstream-form codes built into the software but this list should be edited to suit your needs. Just be consistent in their use so you can compare transcripts across time or compare one transcript to a different set of transcripts coded the same way. The *Setup menu --> Lists --> Current Code Lists* option is used to identify the nonmainstream-form codes. The default codes include **[D]** which indicates any unspecified nonmainstream form. The rest of the codes are taken from Julie Washington's chapter on AAE dialect features which is found in the [SALT Reference Book](#), accessed from the Help menu. They include:

Morphosyntactic AAE Features Used by Children in Northern Dialect Regions		
Feature	Example	Code
Deletion of Copula & Aux	they__ catchin' a bus	[D:COP]
Subject-Verb Agreement	they was sittin' down at the table	[D:SVA]
Fitna/Sposeta/Bouta code <i>imminent action</i>	is she <i>fitna</i> drink some? he was <i>bouta</i> get in the car	[D:FSB]
Undiff. Pronoun Case	Them pullin' them up the hill	[D:UPC]
Multiple Negation	why you <i>don't</i> want <i>nobody</i> to put <i>none</i> too close to your mouth?	[D:NEG]
Zero Possessive	they waitin' for <i>they</i> car	[D:POS]
Zero Past Tense	and then he <i>fix__</i> the food yesterday we <i>take</i> the long way home	[D:ZPT]
Invariant "be"	they <i>be</i> gettin' some ice cream	[D:IBE]
Zero "to"	and he waitin' for the train __ go	[D:ZTO]
Zero plural	a girl puttin' some <i>glass__</i> out on the table to drink	[D:ZPL]
Double Modal	why <i>did</i> the boy <i>didn't</i> stop?	[D:MOD]
Regularized Reflexive	he stands by <i>hisself</i>	[D:REF]
Indefinite Article	they buildin' <i>a</i> apartment	[D:ART]
Appositive Pronoun	and the other ones <i>they</i> didn't have nothin	[D:PRO]
Remote Past "been"	I <i>been</i> knowin' how to swim	[D:BEN]
Morphosyntactic AAE Features Used by Older Children and Adults		
Preterite <i>had</i>	he <i>had</i> got his toes stuck before	[D:HAD]
Completive <i>done</i>	I think we <i>done</i> ate enough	[D:DON]

Existential <i>it</i>	it seems like <i>it's</i> a lot more on here that you haven't shown me	[D:EIT]
Resultative <i>be done</i>	we <i>be done</i> dropped these and broke 'em	[D:BED]
Double marked –s	this one is like <i>mines</i>	[D:DMK]
Non-inverted Questions	that's how it go?	[D:NIQ]

B. Using the SALT Editor to Insert the Codes in your Transcript

Select *Edit menu: Insert Code* to bring up the dialogue box “Code Lists Used to Facilitate Inserting Codes in a Transcript”. At the bottom left of the dialogue box, check the “Nonmainstream-form Codes” option. The default codes are listed. The code list can be changed, or customized, and saved for future use if desired. After accepting the default list of codes, or customizing your own set of codes, click OK in the upper right corner of the dialogue box. The “Select code to be inserted” dialogue box is displayed. You are provided with options for the position of the codes. They can be inserted at the point of the cursor in the transcript, at the beginning of a word, at the end of a word, or at the end of an utterance.

You may choose to insert a generic code, e.g., [D], at the end of any utterance containing one of the nonmainstream forms. Or you may choose to insert more detailed codes at the end of a word, between words, or at the end of the utterance.

C. Using SALT to Analyze the Codes

There are several analyses where the nonmainstream-form codes are identified separately from the other codes in the transcript. These analyses include:

Analyze menu

- Standard Measures Report: includes the variable *% Utts with Nonmainstream Forms*.
- Syntax/Morphology Summary: includes the variables *% Utts with Nonmainstream Forms* and *Number of Utts with Nonmainstream Forms*.
- Standard Utterance Lists: lets you select *Utterances with ... Nonmainstream-form Codes*.
- Word Code Tables: lets you restrict the selection of word codes to *Nonmainstream-form codes*.
- Utterance Code Tables: lets you restrict the selection of utterance codes to *Nonmainstream-form codes*.
- Nonmainstream-form Codes: counts and lists all nonmainstream-form codes found in the transcript.

Database menu: the reference databases included with the software have not been coded for fluency. If you compare your sample with samples selected from these databases, the fluency variables are included but the database values are left blank.

- Standard Measures Report: includes the variable *% Utts with Nonmainstream Forms*.
- Syntax/Morphology Summary: includes the variables *% Utts with Nonmainstream Forms* and *Number of Utts with Nonmainstream Forms*.

Guide to the SALT 20 Variables



Variables Included in the *Standard Measures Report*

	Language Measure	Description
	Current Age	Current age of speaker
TRANSCRIPT LENGTH		
	Total Utterances	Total number of utterances
#	C&I Verbal Utts (<i>current analysis set</i>)	Number of utterances in the current analysis set
	All Words Including Mazes	Total number of completed words (<i>excludes part words</i>)
	Elapsed Time	Elapsed time in minutes
INTELLIGIBILITY		
	% Intelligible Utterances	% of verbal utterances or words that do not contain unintelligible segments
	% Intelligible Words	(<i>excludes mazes</i>)
MACRO ANALYSIS		
	NSS Composite Score ESS Composite Score PSS Composite Score ONQ Composite Score CQ Composite Score ONC Composite Score	- Included if the sample is a narrative, expository, or persuasion (<i>defined by +Context: Nar, +Context: Expo, +Context: Pers</i>) and the specific scoring scheme has been applied on plus lines in the transcript; composite score is the sum of the individual scores - Comprehension questions composite score (<i>if transcript is narrative and scored for comprehension</i>) - Oral narrative comprehension composite score (<i>if transcript is narrative based on AGL story and is scored for comprehension</i>)
SYNTAX/MORPHOLOGY		
#	MLU in Words MLU in Morphemes	Mean length of utterances in words or morphemes (<i>excludes mazes</i>)
#	% Utterances with Verbs Mean Verbs per Utterance	- percent of utterances which contain verbs - ratio of the number of verbs to the number of utterances (<i>verbs are identified as either "Verbs" or "Copula Forms" using the Grammatical Category algorithm – only available for English samples</i>)
#	% Utts with Nonmainstream Forms	Percent of utterances which contain one or more nonmainstream-form codes
#	SI Composite Score	Included only if the sample has been coded for Subordination Index; composite score is the average of the individual scores
SEMANTICS		
#	Number Total Words (NTW)	Total number of words (<i>excludes mazes</i>)
#	Number Different Words (NDW)	Number of different word roots (<i>excludes mazes</i>)
#	Moving-Average NTW Moving-Average NDW Moving-Average Type-Token Ratio (TTR)	Estimates NDW using a moving window. Initially, a window size (Moving-Average NTW) is selected, e.g., 100 words, and NDW for words 1–100 is calculated. Then NDW is calculated for words 2–101, then 3–102, and so on to the end of the sample. Moving-Average NDW is then calculated as the average of the individual NDWs. Finally Moving-Average TTR is calculated by dividing Moving-Average NDW by Moving-Average NTW.
DISCOURSE (<i>not included for narrative or expository samples</i>)		
	Mean Turn Length (utterances) Mean Turn Length (words)	Average number of consecutive utterances/words (<i>excludes mazes</i>)
	% Responses to Questions % Responses to Intonation Prompts	% of another speaker's questions/intonation prompts that were responded to, where response is defined as an utterance from the target speaker immediately following the question or prompt
	% Utts with Overlapping Speech	Number of utterances containing overlapping speech
	% Utts Interrupted Other Speaker	Number of times target speaker interrupted another speaker

VERBAL FACILITY	
Words/Minute	Ratio of all words produced to the elapsed time (<i>excludes part words</i>)
Pause Time as % of Total Time	Percent of elapsed time that consists of pause time
Maze Words as % of Total Words	Percent of total words that are in mazes
% Abandoned Utterances	Percent of total utterances that were abandoned
% Utterances with Fluency Codes	Percent of total utterances which contain one or more fluency codes
ERRORS	
% Utterances with Errors	Percent of utterances which contain omissions or error codes
Number of Omissions	Number of omitted words or bound morphemes
Number of Error Codes	Number of words or utterances coded as errors

Measures based on the C&I Verbal Utts (*current analysis set*)

Follow-up reports based on results of the *Standard Measures Report*

When one or more measures on the *Standard Measures Report* indicates the need for more detailed information, use the Analyze and Database menus to support your findings. Below are suggestions for where to look further.

Language Measure	Additional Reports/Comments
<ul style="list-style-type: none"> Current Age 	
TRANSCRIPT LENGTH	
# <ul style="list-style-type: none"> Total Utterances C&I Verbal Utts All Words Including Mazes Elapsed Time 	<ul style="list-style-type: none"> Read the transcript Analyze menu: Summary of Utterance Types Analyze quality of narratives by applying NSS/ESS/PSS/ONQ coding (see MACRO ANALYSIS section)
INTELLIGIBILITY	
<ul style="list-style-type: none"> % Intelligible Utterances % Intelligible Words 	<ul style="list-style-type: none"> Listen to the audio to determine if unintelligibility is due to the client's speech production, or whether it is due to equipment and/or environment Analyze menu: Standard Utterance Lists (<i>select unintelligible & partly intelligible</i>) Database menu: Transcript Length & Intelligibility
MACRO ANALYSIS	
<ul style="list-style-type: none"> NSS Composite Score ESS Composite Score PSS Composite Score ONQ Composite Score CQ & ONC Composite Scores 	<ul style="list-style-type: none"> Analyze/Database menus: Narrative Scoring Scheme Analyze/Database menus: Expository Scoring Scheme Analyze/Database menus: Persuasion Scoring Scheme Analyze/Database menus: Oral Narrative Quality Analyze menu: Comprehension Questions
SYNTAX/MORPHOLOGY	
# <ul style="list-style-type: none"> MLU in Words 	<ul style="list-style-type: none"> Analyze/Database menus: Syntax/Morphology Summary
# <ul style="list-style-type: none"> MLU in Morphemes 	<ul style="list-style-type: none"> Analyze/Database menus: Utterance Distribution Tables
# <ul style="list-style-type: none"> % Utterances with Verbs 	<ul style="list-style-type: none"> Analyze menu: Bound Morpheme Tables (<i>expand if desired</i>)
# <ul style="list-style-type: none"> Mean Verbs per Utterance 	<ul style="list-style-type: none"> Apply Subordination Index (SI) coding
# <ul style="list-style-type: none"> % Utts with Nonmainstream Forms 	<ul style="list-style-type: none"> Analyze/Database menus: Syntax/Morphology Summary Analyze menu: Standard Utterance Lists (<i>select utterances with Nonmainstream-form codes</i>)
# <ul style="list-style-type: none"> SI Composite Score 	<ul style="list-style-type: none"> Analyze/Database menus: Subordination Index

SEMANTICS		
#	<ul style="list-style-type: none"> • Number Total Words (NTW) 	<ul style="list-style-type: none"> • Analyze/Database menus: Semantics Summary
#	<ul style="list-style-type: none"> • Number Different Words (NDW) 	<ul style="list-style-type: none"> • Analyze menu: Word Root Tables <i>(expand if desired)</i>
#	<ul style="list-style-type: none"> • Moving-Average NTW 	<ul style="list-style-type: none"> • Analyze menu: Standard Word Lists <i>(specify which to view)</i>
#	<ul style="list-style-type: none"> • Moving-Average NDW 	<ul style="list-style-type: none"> • Analyze/Database menus: Grammatical Categories <i>(English only)</i>
#	<ul style="list-style-type: none"> • Moving-Average TTR 	<ul style="list-style-type: none"> • Analyze menu: Grammatical Category Lists <i>(English only)</i>
DISCOURSE <i>(not included for narrative, expository, or persuasion samples)</i>		
	<ul style="list-style-type: none"> • Mean Turn Length (utterances) • Mean Turn Length (words) • % Responses to Questions • % Responses to Intonation Prompts • % Utts with Overlapping Speech • % Utts Interrupted Other Speaker 	<ul style="list-style-type: none"> • Analyze/Database menus: Discourse Summary • Analyze/Database menus: Turn Length Distribution Tables • Analyze menu: Standard Utterance Lists <i>(select 2nd speaker questions and/or intonation prompts and look at following entries; select utterances with overlapping speech; select 2nd speaker interrupted utterances and look at following entries)</i>
VERBAL FACILITY		
#	<ul style="list-style-type: none"> • Words/Minute • Pause Time as % of Total Time • Maze Words as % of Total Words • % Abandoned Utterances • % Utterances with Fluency Codes 	<ul style="list-style-type: none"> • Analyze/Database menus: Verbal Facility Summary • Analyze menu: Standard Utterance Lists <i>(select utterances with pauses, utterances with mazes, abandoned utterances, and/or fluency codes)</i> • Analyze menu: Fluency Codes and Behaviors <i>(if sample was coded for fluency)</i>
ERRORS		
	<ul style="list-style-type: none"> • % Utterances with Errors • Number of Omissions • Number of Error Codes 	<ul style="list-style-type: none"> • Analyze/Database menus: Errors Summary • Analyze menu: Omissions and Error Codes <i>(look for patterns)</i> • Analyze menu: Code Summary • Analyze menu: Word Code Tables • Analyze menu: Utterance Code Tables • Analyze menu: Standard Utterance Lists <i>(select utterances with omissions, error codes)</i>

Performance Report

Lee

Age: 3;3

Language Sample Analysis with SALT Software

Elicitation Task and Database Overview

Lee completed a play-based conversational sample with an examiner. His language sample was compared with samples from 30 speakers completing the same task. These database samples were within 6 months of Lee's age. Some language measures, such as number of different words and number of errors, are affected by the length of the sample, i.e., the longer the sample, the more opportunity to produce them. For these measures, Lee's sample was compared with the samples matched in length by the same number of words. All measures are interpreted using a standard deviation interval of 1.00 SD.

Transcript Length

Lee produced 69 utterances using a total of 119 words in 5 minutes.

Intelligibility

Lee's intelligibility was within normal limits with 92.75% intelligible utterances and 95.65% intelligible words.

Syntax/Morphology

Lee's mean length of utterance (MLU) in words was 1.60, which was 2.57 SD below the database mean of 3.15. Most frequently, he used 1-word, 2-word, and 3-word utterances. His MLU in morphemes was 1.67, which was 2.68 SD below the database mean of 3.43.

Semantics

Lee used 37 different words (NDW) within an analysis set of 101 total words (NTW). NDW was more than 3 SD below the database mean. Comparing NDW to NTW across the sample shows a moving-average type token ratio of 0.37, which was more than 3 SD below the database mean of 0.55. This low ratio, along with low NDW, indicates reduced vocabulary diversity. He used fewer different negatives, core modals, and personal pronouns than his database peers.

Discourse

The examiner asked 19 questions and made 43 statements. Lee produced 50 statements and asked 18 questions. 1 of his utterances was a reduced imitation of the examiner. He responded to 89.47% of questions asked by the examiner, which was above average compared to the database mean of 69.30%. Lee used an average of 2.50 words per speaking turn, which was 1.74 SD below the database mean of 3.93. However he used an average of 1.50 utterances per speaking turn, which was within the average range of 1.29 utterances per turn. His sample contained 12 utterances that overlapped with the examiner, which was more than 3 SD higher than the database mean of 3.80. He interrupted the examiner 1 time during the language sample, which was 2.51 SD higher than the database mean of 0.13 times.

Verbal Facility

Lee's rate of speech, at 23.80 words per minute, was slower than the database mean by 1.01 SD. His sample contained 20 between-utterance pauses for a total time of 1 minute and 34 seconds, with an average pause time of 4.70 seconds. The total number of pauses and total pause time were both within normal limits, while the average pause time was 1.55 SD higher than the database mean. A high number of pauses may indicate difficulty with word retrieval and/or utterance formulation. In Lee's sample, 2.88% of the words were filled pauses, false starts, repetitions, or reformulations. This was a strength at 1.21 SD lower than the database mean of 8.02%.

Errors

19.05% of Lee's utterances contained errors, which was comparable to his database peers. He omitted the 3rd person singular bound morpheme three times and a contracted verb form once. Although he did not use these bound morphemes, he used the plural bound morpheme four times. He also omitted the words ARE once, DO once, HERE once, IS three times, and IT once. His sample contained the following word-level error: ME[EW:ILL]. His sample also contained the following 3 utterance-level errors:

C X here too [EU].

C Coke up [EU].

C This go [EU]?

Characteristic	Proficient (5)	Emerging (3)	Minimal/Immature (1)
<p>Introduction Score based on the presence, absence, and qualitative depiction of character and setting components.</p>	<p>1) Setting: - General setting includes: boy’s bedroom, nighttime, bedtime - mentions the frog is kept in a jar</p> <p>2) Characters: - Boy, dog and frog are introduced with description.</p> <p>EXAMPLE <i>A little boy had a pet frog. He put the frog in a jar in his bedroom. He stared at the frog. The dog looked in the jar and saw the frog too. While the boy was sleeping the frog jumped out and ran out the window.</i> Note: All 3 characters mentioned. Setting mentioned (bedroom, jar). Events ordered correctly.</p>	<p>1) Setting - One or two portions of the general setting are mentioned without adequate detail -General setting includes: boy’s bedroom, nighttime, bedtime - mentions the frog is kept in a jar</p> <p>2) Characters: Two of the three characters are mentioned Or Characters mentioned without adequate detail</p> <p>EXAMPLE <i>One morning a boy woke up. He was looking at his frog. At night the frog went out.</i> Note: Minimal detail of characters, does not mention dog, no setting is mentioned.</p>	<p>Launches into story with no attempt to provide the setting or introduce the characters.</p> <p>EXAMPLE <i>A boy was looking at the frog. It jumped out the window</i> Note: Overall poor introduction that lacks setting or character description.</p>
<p>Character Development Scored based on the acknowledgment of characters and their significance throughout the story.</p>	<p>Main characters- boy, dog, frog are mentioned consistently throughout story with description</p> <p>All supporting character- bees, gopher, owl, deer, mother frog and baby frogs are mentioned</p> <p>Narration in first person with character voice</p> <p>EXAMPLE <i>And then when the little boy said “Good morning”, the dog and the boy saw the frog was gone. ... And there were the froggy parents. And they had eight babies.</i> Note: All characters noted consistently. Uses dialog.</p>	<p>Main characters- boy, dog, frog are mentioned without description</p> <p>Supporting characters- bees, gopher, owl, deer, mother frog and baby frogs are mentioned</p> <p>Little difference in the description between main and supporting characters.</p> <p>Minimal first person narration</p> <p>EXAMPLE <i>The boy and the dog crawled out of bed. And they look. And the frog went out the window.</i> Note: All 3 main characters introduced.</p>	<p>Main characters- boy, dog, frog are not consistently mentioned in the story</p> <p>Missing supporting characters- bees, gopher, owl, deer, mother frog and baby frogs critical to advancing the plot</p> <p>No first person narration</p> <p>EXAMPLE <i>Well the boy liked the frog. He fell. And he pushed on him.</i> Note: Does not mention the dog until barks at the bees. No mention of the jar being stuck on the dog’s head.</p>
<p>Mental and Emotional States Score based on the vocabulary used to convey character emotions and through processes.</p>	<p>Use of mental and emotional state words when necessary to advance the plot for main and supporting characters</p> <p>Emotional State examples: angry, happy, bad, sad, worried</p> <p>Mental State examples: knew, think, decide, liked, recognize</p> <p>Use of varied mental and emotional state words</p> <p>EXAMPLE <i>His frog was missing. And he was <u>very worried</u>. ... The boy was yelling in a hole. And the gopher got <u>very angry</u> and bit his nose. ... He <u>liked</u> the baby frog...He <u>recognized</u> that sound.</i> Note: a variety of mental state words were used.</p>	<p>Use of emotional and mental state words used in some of the story events</p> <p>Mental and emotional state words used only for main characters</p> <p>Little variation of mental and emotional state words</p> <p>- Some use of evident mental state words to develop character(s).</p> <p>EXAMPLE <i>The boy was <u>mad</u>. The gopher was <u>mad</u>.</i></p>	<p>Minimal or no use of mental and emotional state words</p> <p>EXAMPLE <i>Then the boy saw the frog was gone.</i></p>

<p>Referencing/Listener Awareness Scores based on the consistent and accurate use of antecedents and clarifiers throughout the story. Use of correct pronouns and proper names should be considered when scoring.</p>	<p>Use of correct character names (boy, dog, frog, bee, gopher, owl, deer)</p> <p>Correct pronoun use throughout narrative</p> <p>Listen can easily understand who is speaker is referring to in the story</p> <ul style="list-style-type: none"> - Provides necessary antecedents to pronouns. - References are clear throughout story. <p>EXAMPLE <i>The boy was very happy. And the dog was looking inside the jar. And there was a frog. Then the dog was sleeping with the boy.</i></p>	<p>Few errors in character names (e.g., rat for gopher)</p> <p>Most pronouns are correct</p> <p>Listen may have to infer who the speaker is referring to in the story</p> <ul style="list-style-type: none"> - Inconsistent use of referents/antecedents. <p>EXAMPLE <i>And the dog barked at the bugs and then climbed up a tree. And then the bugs chased the dog. And then they got out all night. And he said, "Don't come back to my home ever again".</i></p>	<p>Excessive errors in character names</p> <p>Excessive use of pronouns</p> <p>Listen is not able to discern who the speaker is referring to throughout the story</p> <ul style="list-style-type: none"> - Excessive use of pronouns. - No verbal clarifiers used. - Speaker is unaware listener is confused. <p>EXAMPLE <i>They looked over a dead tree. And we saw a family of frogs. And he took one home.</i> Note: Ambiguous pronouns.</p>
<p>Conflict/Resolution or Event/Reaction Scores based on the presence/absence of conflicts or events and resolutions required or character reaction to express the story as well as how thoroughly each was described.</p>	<p>Clearly states the major conflict of the story with detail.</p> <ol style="list-style-type: none"> 1. Frog is missing from his jar/boy and the dog find the frog with his family 2. Boy cannot take his frog home/Boy takes a baby frog to be his new pet. <p>All supporting story elements necessary to advancing the plot are covered with appropriate amount of detail.</p> <ol style="list-style-type: none"> 1. Bees chasing the dog 2. Gopher biting boy 3. Owl chasing the boy 4. Deer running with boy on his head 	<p>Major conflicts of the story are mentioned, but without adequate detail.</p> <ol style="list-style-type: none"> 1. Frog is missing from his jar/boy and the dog find the frog with his family 2. Boy cannot take his frog home/Boy takes a baby frog to be his new pet. <p>Only 2-3 supporting story elements necessary to advancing the plot are covered. Lacks detail or too much detail is provided.</p> <ol style="list-style-type: none"> 1. Bees chasing the dog 2. Gopher biting boy 3. Owl chasing the boy 4. Deer running with boy on his head 	<p>Missing one of the major conflicts of conflicts are missing resolution.</p> <ol style="list-style-type: none"> 1. Frog is missing from his jar/boy and the dog find the frog with his family 2. Boy cannot take his frog home/Boy takes a baby frog to be his new pet. <p>Only 1-2 supporting story elements necessary to advancing the plot are covered. Lacks detail or too much detail is provided.</p> <ol style="list-style-type: none"> 1. Bees chasing the dog 2. Gopher biting boy 3. Owl chasing the boy 4. Deer running with boy on his head
<p>Cohesion Scores based on the sequence of, details given to, and transitions between each event.</p>	<p>Events follow the order of the story</p> <p>Minimal or no revisions, reformulations of utterances</p> <p>Use of smooth transitions between events with varied transitional vocabulary (then, next, finally)</p> <p>EXAMPLE <i>And the deer shoved him off of the cliff. After that he saw his frog. And his frog had a family. Then a frog jumped out to him. He liked the frog. And he took it home.</i></p>	<p>Events follow the order of the story</p> <p>There is too much detail on supporting events or lacks detail of main events of the story</p> <p>Some revisions and reformulations are present throughout the story</p> <p>Lacks smooth transitions between events with little variety in transitional vocabulary</p> <p>EXAMPLE <i>And the deer shoved him off of the cliff. And he saw his frog. And he had a family. Then a frog jumped out to him. And he liked the frog. And he took it home.</i></p>	<p>Events do not follow the order of the story</p> <p>Revisions and reformulations are prevalent throughout the story</p> <p>No use of transitions between events of the story</p> <p>EXAMPLE <i>And he heard something. And the deer shoved him off of the cliff. And a frog jumped out to him. And he took it home.</i></p>

<p>Conclusion Scores are based on the conclusion of the final event as well as the wrap up of the entire story.</p>	<p>Story is clearly wrapped up with all three components:</p> <ol style="list-style-type: none"> 1. The boy and dog find the frog 2. The boy takes one of the baby frogs to be his pet 3. Boy waves goodbye and is happy to have a new pet frog <p>EXAMPLE <i>And the boy took a baby frog home to be his new pet. They lived happily ever after.</i></p>	<p>Story is wrapped up with <i>two</i> the three concluding components:</p> <ol style="list-style-type: none"> 1. The boy and dog find the frog 2. The boy takes one of the baby frogs to be his pet 3. Boy waves goodbye and is happy to have a new pet frog <p>EXAMPLE <i>And he wanted it. So he got a baby frog, one of them.</i></p>	<p>Listener may not know the story has ended. Story ends abruptly with mention of <i>one</i> of the concluding components:</p> <p>The boy and dog find the frog or The boy takes one of the baby frogs to be his pet or Boy waves goodbye and is happy to have a new pet frog</p> <p>EXAMPLE <i>And then he saw lots of frogs.</i></p>
<p>Scoring: Each characteristic receives a scaled score 0-5. Proficient characteristics=5, Emerging=3, Minimal/Immature=1. Scores in between are undefined, use judgment. Scores of 0 and NA are defined below. A composite is scored by adding the total of the characteristic scores. Highest score possible=35.</p> <p>* A score of 0 is given for <u>TARGET SPEAKER</u> errors (i.e., telling the wrong story, conversing with examiner, not completing/refusing task, abandoned utterances, unintelligibility, poor performance, components of rubric are given in imitation-only manner).</p> <p>* A score of NA (non-applicable) is given for <u>MECHANICAL/EXAMINER/OPERATOR</u> errors (i.e., interference from background noise, issues with recording, examiner quitting before target speaker does, examiner not following protocol, examiner asking overly specific or leading questions rather than using open-ended questions or prompts).</p>			

Expository Scoring Scheme (ESS) Guide



INTRODUCTION

The *Expository Scoring Scheme* (ESS) assesses the content and structure of an expository language sample, similar to how the Narrative Scoring Scheme (NSS) provides an overall measure of a student's skill in producing a narrative. The ESS is comprised of 10 characteristics for completing an expository language sample. The first 8 characteristics correspond to the topics listed on the planning sheet that is given to students. To ensure fair scoring, if the game or sport is unfamiliar, acquaint yourself with the procedure/rules, e.g., the card game web site (<http://www.pagat.com/>).

Samples contained in the SALT Expository reference database have all been coded for ESS. This database can be utilized to compare a student's expository skills to those of his/her typically-developing peers. Clinicians can compare individual characteristics of the ESS or the composite score using the database. The expository task may be repeated to assess progress of expository skills.

SCORING GUIDELINES

Assigning ESS Scores

The ESS is scored using a 0 - 5 point scale. 5 points are given for "proficient" use, 3 points for "emerging" use, and 1 point for "minimal" or "immature" use. Scores of 2 and 4 are undefined and require judgment. Scores of zero (0) can be assigned for poor performance on the task and/or telling about a different game or sport, conversing with the examiner, not completing/refusing the task, and when target components of the ESS are imitated. Significant factual errors reduce the score for that topic. Scores of NA (non-applicable) can be assigned for mechanical/examiner/operator errors such as interference from background noise, issues with recording (cut-offs, interruptions), and/or examiner not following protocol, examiner asking overly specific or leading questions rather than open-ended questions or prompts.

Helpful Scoring Tips

- Be familiar with the topic of the expository, i.e., the game or sport being explained.
- Print the expository transcript.
- Read the transcript as fluidly/inclusively as possible, ignoring SALT transcription codes.
- Write comments and circle or flag key words/utterances such as those relating to terminology and rules.
- For *each* characteristic, review the ESS scoring rubric before assigning a score. Read the criteria along the continuum of points. Determine what is present in the transcript and score accordingly. This will insure intra- and inter-rater reliability.
- Frequently review what constitutes a score of 0 or NA. Explanations are given at the bottom of the ESS scoring rubric.
- Scoring the ESS is a subjective measure by nature; however, as you gain experience, the process of scoring will become reliable.
- When beginning to score, you may want to compare your scores against the training transcripts on the SALT website or with another scorer. The training transcripts were scored by several scorers experienced with the ESS.

ESS SCORING RUBRIC

Refer to the scoring rubric on the next page for guidance when assigning scores to each of the ESS characteristics in an expository sample.

Expository Scoring Scheme (ESS) Rubric

Characteristic	Proficient (5)	Emerging (3)	Minimal/Immature (1)
Object	Full description of the main objective	Mention of the main objective	Mention of winner but no or limited description how that is determined OR Description of another aspect of the contest, such as strategy or scoring
Preparations	<p>1) Playing Area Labels place and provides details about shape & layout AND/OR</p> <p>2) Equipment Labels items and provides detailed description, including function AND/OR</p> <p>3) Player Preparations Provides detailed description</p>	<p>1) Playing Area Labels place and provides limited details about shape & layout OR</p> <p>2) Equipment Labels items with limited description OR</p> <p>3) Player Preparations Provides some description</p>	<p>1) Playing Area Labels place but no details about shape & layout OR</p> <p>2) Equipment Labels items with no description OR</p> <p>3) Player Preparations Provides limited description</p>
Start	Describes initial situation and how play begins	Describes initial situation or how play begins, but not both	Limited description of the initial situation or how play begins
Course of Play	Detailed description of: A unit of play AND/OR Major roles AND/OR Major plays	Some description of: A unit of play OR Major roles OR Major plays	Limited description of: A unit of play OR Major roles OR Major plays
Rules	Clear statement of major rules and, when applicable, consequences for violations	Mentions major rules and, when applicable, consequences for violations but without full detail	Minimal or no mention of major rules or consequences for violations
Scoring	Full description of ways to score and point values	Incomplete description of ways to score and point values	Limited description of ways to score or point values
Duration	Clear description of: How long the contest lasts, including, when applicable, the units in which duration is measured AND/OR How the contest ends AND/OR Tie breaking procedures	Some description of: How long the contests lasts OR How the contest ends OR Tie breaking procedures	Limited description of: How long the contests lasts OR How the contest ends OR Tie breaking procedures
Strategy	Full description of some ways to win the contest that are not required by the rules but are what competent players do	Mention of some ways to win the contest that are not required by the rules but are what competent players do	Vague or incomplete mention of some ways to win the contest that are not required by the rules but are what competent players do
Terminology	Terms of game are clearly defined whenever introduced	Some terms of game defined, but not consistently or clearly	Terms of game introduced but not further defined
Cohesion	Topics follow a logical order AND Topics are completely covered before moving on to another; AND Smooth transitions between topics	Topics follow a logical order OR Topics are completely covered before moving on to another OR Smooth transitions between topics	Little discernable order to topics; Much jumping between topics; AND Abrupt transitions between topics
<p>Scoring: Each characteristic receives a scaled score 0-5. Proficient characteristics=5, Emerging=3, Minimal/Immature=1. Scores in between (e.g., 2, 4) are undefined, use judgment. Significant factual errors reduce the score for that topic. Scores of 0, NA are defined below. A composite is scored by adding the total of the characteristic scores. Highest score=50.</p> <p>A score of 0 is given for student errors, e.g., not covering topic, explaining a different game or sport, not completing/refusing task, student unintelligibility, abandoned utterances).</p> <p>A score of NA (non-applicable) is given for mechanical/examiner/operator errors, e.g., interference from background noise, issues with recording (cut-offs, interruptions), examiner quitting before student does, examiner not following protocol, examiner asking overly specific or leading questions rather than open-ended questions or prompts.</p>			

USING SALT TO ENTER ESS SCORES

Use **Edit menu** → **Insert Template** → **Expository Scoring Scheme** to insert the ESS plus line template at the bottom of your transcript. Then type the individual scores after each label.

ESS Template	Example of ESS Scoring
+ Preparations:	+ Preparations: 2
+ ObjectOfContest:	+ ObjectOfContest: 3
+ StartOfPlay:	+ StartOfPlay: 3
+ CourseOfPlay:	+ CourseOfPlay: 3
+ Scoring:	+ Scoring: 4
+ Rules:	+ Rules: 3
+ Strategy:	+ Strategy: 3
+ Duration:	+ Duration: 3
+ Terminology:	+ Terminology: 3
+ Cohesion:	+ Cohesion: 3

ANALYZING THE ESS SCORES

- Use the **Analyze** → **Expository Scoring Scheme** report to list each individual ESS score along with the composite score.
- Use the **Database** → **Expository Scoring Scheme** report to list each individual ESS score along with the composite score. Scores are listed for your transcript and for the selected database samples.

TRYING IT OUT

The free online training course, [1503: ESS – Expository Scoring Scheme](#), has practice transcripts. Compare your scores to those of our trained transcribers.

REFERENCES

Mayer, M. (1969). *Frog, where are you?* New York: Dial Books for Young Readers.

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Persuasion Scoring Scheme (PSS) Guide

INTRODUCTION

The *Persuasion Scoring Scheme* (PSS) assesses the content and structure of a persuasive language sample. The PSS is comprised of seven characteristics for completing a persuasive language sample. The characteristics correspond to the topics listed on the planning sheet that is given to students.

Samples contained in the SALT Persuasion reference database have all been coded for the PSS. This database can be utilized to compare a student's persuasion skills to those of his/her typically-developing peers. Clinicians can compare individual characteristics of the PSS or the composite score using the database. The persuasion task may be repeated to assess progress of persuasive skills through the high school years.

SCORING GUIDELINES

Assigning PSS Scores

The PSS is scored using a 0 - 5 point scale. 5 points are given for "Proficient/Advanced" production, 3 points for "Satisfactory/Adequate" production, and 1 point for "Minimal/Immature" production. Scores of 2 and 4 are undefined and require judgment. Scores of zero (0) are given for student errors such as not completing the task when prompted, refusing the task, unintelligible production(s), and abandoned utterances leaving characteristics incomplete. Scores of NA (non-applicable) are given for mechanical/examiner/operator errors, e.g., interference from background noise, issues with recording (cut-offs, interruptions), examiner not following protocol, examiner interrupting student. Use points in the scoring rubric as a guideline to determine level of proficiency for each characteristic. Not *all* points listed in each characteristic must be present when assigning score.

Helpful Scoring Tips

- Print the persuasion transcript.
- Read the transcript as fluidly/inclusively as possible, ignoring SALT transcription codes.
- Write comments and circle or flag key words/utterances pertaining to points on the planning sheet
- For *each* point, review the PSS scoring rubric before assigning a score. Read the criteria along the continuum of points. Determine what is present in the transcript and score accordingly. This will insure better intra- and inter-rater reliability.
- Frequently review what constitutes a score of 0 or NA.
- Scoring the PSS is a subjective measure by nature; however, as you gain experience, the process of scoring will become reliable.

PSS SCORING RUBRIC

Refer to the scoring rubric on the next page for guidance when assigning scores to each of the PSS characteristics in a persuasion sample.

PSS Scoring Rubric

Characteristic	Proficient/Advanced (5)	Satisfactory/Adequate (3)	Minimal/Immature (1)
Issue Identification and Desired Change	<ul style="list-style-type: none"> Existing rule or situation is clearly understood before supporting reasons are stated Desired change is clearly stated 	<ul style="list-style-type: none"> Existing rule or situation can be discerned; may require shared knowledge Desired change can be discerned 	<ul style="list-style-type: none"> Speaker launches into persuasion with no mention of existing rule or situation Desired change is difficult to determine
Supporting Reasons	<ul style="list-style-type: none"> Reason(s) are comprehensive; include detail Benefit(s) to others are clearly understood 	<ul style="list-style-type: none"> One or more reasons are offered to support desired change Benefit(s) to others are unclear or omitted 	<ul style="list-style-type: none"> Reason(s) are confusing or vague Significant/obvious reason(s) are not stated Reason(s) are not plausible; do not support change
Other Point of View (Counter Arguments)	<ul style="list-style-type: none"> Other point(s) of view are clearly explained; include detail Includes language to support or refute other point of view 	<ul style="list-style-type: none"> Other point(s) of view are acknowledged OR Dismissive of other point(s) of view 	<ul style="list-style-type: none"> Other point(s) of view are unclear or omitted
Compromises	<ul style="list-style-type: none"> Includes language, with some detail, to support or refute compromising 	<ul style="list-style-type: none"> Compromise(s) are acknowledged OR Dismissive of compromising 	<ul style="list-style-type: none"> Compromises are unclear or omitted
Conclusion	<ul style="list-style-type: none"> Desired change is clearly restated/summarized Arguments are clearly restated/summarized Concludes using language such as, "to conclude", "therefore", "and so", "in sum", etc. First step(s) for change are mentioned 	<ul style="list-style-type: none"> Desired change is restated One or more supporting reasons are restated Ending is inferred and/or lacks transition to conclusion, e.g., "And that's all", "that's it", "I'm done" 	<ul style="list-style-type: none"> Summary statement(s) are omitted Unclear to listener that the persuasion task is completed
Cohesion	<ul style="list-style-type: none"> Points are fully covered before moving on to another Transitions between points are smooth/clear using mature language Referents are clear Listener can easily follow the argument 	<ul style="list-style-type: none"> Point are covered, but lack organization Transitions between points are acceptable Referencing is adequate Listener can follow the argument with some effort 	<ul style="list-style-type: none"> Points are not fully covered before moving onto another Abrupt transitions between points Referents are unclear, hard to follow Argument is difficult to follow
Effectiveness	<ul style="list-style-type: none"> Argument is extremely compelling Argument is entirely plausible Argument is well stated Mature language is used Minimal errors of syntax/form Supported points well Speaker's delivery is passionate Speaker engages listener 	<ul style="list-style-type: none"> Argument is compelling Argument is plausible Argument requires little or no clarification Acceptable syntax/form Speaker's delivery is clear; not necessarily passionate Effort to persuade is evident Speaker makes some attempt to engage listener 	<ul style="list-style-type: none"> Argument is minimally or not compelling Argument is not plausible Language is unclear Errors of syntax/form may be prevalent Speaker's delivery lacks effort; not passionate Speaker makes no attempt to engage listener Speaker uses inappropriate/immature tone

Scoring: Each characteristic receives a scaled score 0-5. Proficient/Advanced characteristics=5, Satisfactory/Adequate=3, Minimal/Immature=1. Scores in between, 2 and 4, are undefined, use judgment. Significant factual errors reduce the score for that topic. Scores of 0, NA are defined below. A composite is scored by adding the total of the characteristic scores. Highest score=35.

A score of 0 is given for student errors, e.g., not covering topic, not completing/refusing task, student unintelligibility, abandoned utterances.

A score of NA (non-applicable) is given for mechanical/examiner/operator errors, e.g., interference from background noise, issues with recording (cut-offs, interruptions), examiner not following protocol, examiner asking overly specific or leading questions rather than open-ended questions or prompts.

USING SALT TO ENTER PSS SCORES

Use **Edit menu** → **Insert Template** → **Persuasion Scoring Scheme** to insert the PSS plus line template at the bottom of your transcript. Then type the individual scores after each label.

PSS Template	Example of PSS Scoring
+ IssueID:	+ IssueID: 2
+ SupportReasons:	+ SupportReasons: 3
+ PointOfView:	+ PointOfView: 3
+ Compromises:	+ Compromises: 3
+ Conclusion:	+ Conclusion: 4
+ Cohesion:	+ Cohesion: 3
+ Effect:	+ Effect: 3

ANALYZING THE PSS SCORES

- Use the **Analyze menu** → **Persuasion Scoring Scheme** report to list each individual PSS score along with the composite score.
- Use the **Database menu** → **Persuasion Scoring Scheme** report to list each individual PSS score along with the composite score. Scores are listed for your transcript and for the selected database samples.

TRYING IT OUT

The free online training course, [1504: PSS – Persuasion Scoring Scheme](#), has practice transcripts. Compare your scores to those of our trained transcribers.

REFERENCES

Mayer, M. (1969). *Frog, where are you?* New York: Dial Books for Young Readers.

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