A Native English-Speaking Child's First Language Acquisition

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[1. Introduction:]

The purpose of this project was to observe a native English-speaking child's perception and production of English words and production in his spontaneous speech, and improvement in his perception and production over a year. I also observed how four language approaches — (the syntactic approach, the behaviorist approach, the cognitive approach, and the functionalist approach) —affect the language development of the native English-speaking child.

[2. Explanation of perception, production, and four language approaches:]

The syntactic approach was advocated by Chomsky. "Chomsky proposes as a theoretical construct a language acquisition device (LAD), which accepts as input the primary linguistic data and has as output a grammar of the language from which the data have been drawn." (Elliot, page 7,8) Also "Chomsky believes in a strong innate component to language acquisition." (Elliot, page 28)

The behaviorist approach was advocated by Skinner and his associates. They focused on the imitation and reinforcement hypothesis of language development.

The cognitive approach was advocated by Piaget, Vygotsky, and Bruner. Piaget proposed that language development is closely related to cognitive development. Vygotsky proposed that language development produces cognitive development; language is a tool of cognitive development. Bruner focused on how children's language develops from interaction between language and behavior. Bruner also focused on how social reaction allows a child to develop both cognitive concept and language in combination.

The functionalist approach was advocated by Greenfield and Bates. They focused on the function of language and studied that what a child is able to express using language.

Peter Reich studied the strategies for producing words by native English-speaking children. The strategies are syllable deletion, syllable reduplication, deletion of sounds, addition of sounds, substitution of sounds, assimilation of sounds, reversal of sounds, and multiple processes. Syllable deletion is the dropping of unstressed syllables: for example, [æ p] for "apple." Syllable reduplication is not producing a second syllable distinct from the first: for example, "fafa" for "father." Deletion of sounds is the deletion of final consonants: for example, "da" for "dog." Addition of sounds is adding a vowel so that the consonant is no longer final: for example, "piga" for "pig" and "pulay" for "play." Substitution of sounds is changing sounds: for example, "bak" for "bag," "deebra" for "zebra," "tued" for "shoes," and "doot" for "juice," "pad" for "pan," "wabbit" for "rabbit," and "sue" for "shoe."

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the same word: for example, "fweet" for "sweet." Reversal of sounds is, in producing their first words children get the sounds out of their proper sequence: for example, "aminal" for "animal" and "navilla" for "vanilla." Multiple processes are operated several processes in the same word: for example, [pASA] for "fish" and [bap] for "lamb." (Reich, page 60-62)

[3. Informant:]

When I observed a native English-speaking child, Bobby, for the first time, he was four years and ten months old. He had a ten-year-old brother. Bobby was attending kindergarten. His mother stayed home and took care of her children. Bobby and his family were living in Redond Beach, California. They are still there.

[4. Materials: minimal word pairs and word lists:]

4. r	Aaterials: minimal wo	oru pairs anu woru list:	5:_
1.	pet[pɛt]-pat[pæt] bet[bɛt]-bat[bæt]	pen[pɛn]-pan[pæn]	bed[bɛd]-bad[bæd]
2.	pin[pIn]-pen[pɛn]	pat[pæt]-pet[pɛt]	bait[bet]-bet[bɛt]
	mitt[mIt]-meat[mit]		fit[fit]-feet[fit]
	it[It]-eat[it]		
4.	early[31i]	purple[p3 [,] pl]	circle[s3kl]
5.	afternoon[æft>nun]	faster[fæstð]	hamburger[hæmbəgəv]
6.	brush[brʌʃ] sun[sʌ	n] study[stʌdi] t	ouch[tʌtʃ]
7.	pear[pɛr]-bear[bɛr]	cap[kæp]-cab[kæb]	lap[læp]-lab[læb]
	nap[næp]-nab[næb]	tap[tæp]-tab[tæb]	pig[pIg]-big[bIg]
	peg[pɛg]-beg[bɛg]	pie[paI]-buy[baI]	pole[pol]-bowl[bol]
	puff[pʌf]-buff[bʌf]	<pre>peak[pik]-break[brek]</pre>	pat[pæt]-bat[bæt]
8.	and[ænd]-ant[ænt]	build[buIld]-built[bIlt]	
	bend[bend]-bent[bent	.]	
	dime[daIm] door[dor] window[wIndo]	potato[pəteto] bottle[bɔtəl]
	little[lItəl] ghost[
9.	luck[lnk]-lug[lng]	sack[sæk]-sag[sæg]	rack[ræk]·rag[ræg]
	luck[lʌk]-lug[lʌg] snack[snæk]-snag[sn	sack[sæk]-sag[sæg] æg]	
	<pre>luck[lnk]-lug[lng] snack[snæk]-snag[sn safe[sef]-save[sev]</pre>	sack[sæk]-sag[sæg] æg] belief[bIlif]-believe[bIl	iv]
	<pre>luck[lnk]-lug[lng] snack[snæk]-snag[sn safe[sef]-save[sev] family[fæmIli] lov</pre>	sack[sæk]-sag[sæg] æg] belief[bIlif]-believe[bIl ve[lʌv] feed[fid]	
10.	<pre>luck[lAk]-lug[lAg] snack[snæk]-snag[sn safe[sef]-save[sev] family[fæmIli] lov gloves[glAvz] laug</pre>	sack[sæk]-sag[sæg] æg] belief[bIlif]-believe[bIl ve[lʌv] feed[fid] gh[lʌf] leave[liv]	iv] variety[vəraIəti] knife[naIf]
10.	<pre>luck[lAk]-lug[lAg] snack[snæk]-snag[sn safe[sef]-save[sev] family[fæmIli] lov gloves[glAvz] laug very[vɛri]-berry[bɛri]</pre>	<pre>sack[sæk]-sag[sæg] æg] belief[bIlif]-believe[bIl ve[lʌv] feed[fid] gh[lʌf] leave[liv]] van[væn]-ban[bæn]</pre>	iv] variety[vərαIəti] knife[nαIf]] verse[v3s]-berth[b3θ]
10.	<pre>luck[lʌk]-lug[lʌg] snack[snæk]-snag[sn safe[sef]-save[sev] family[fæmIli] lov gloves[glʌvz] laug very[vɛri]-berry[bɛri] verb[vʒb]-barb[bʒb]</pre>	sack[sæk]-sag[sæg] æg] belief[bIlif]-believe[bIl ve[lʌv] feed[fid] gh[lʌf] leave[liv]] van[væn]-ban[bæn] vest[vɛst]-best[bɛst]	iv] variety[vərαIəti] knife[nαIf]] verse[v3s]-berth[b3θ]
10. 11.	<pre>luck[lAk]-lug[lAg] snack[snæk]-snag[sn safe[sef]-save[sev] family[fæmIli] lov gloves[glAvz] laug very[vɛri]-berry[bɛri] verb[v3b]-barb[b3b] lover[lAvə-]-robber[r/</pre>	<pre>sack[sæk]-sag[sæg] æg] belief[bIlif]-believe[bIl ve[lAv] feed[fid] yh[lAf] leave[liv]] van[væn]-ban[bæn] vest[vɛst]-best[bɛst] Abəⁱ]</pre>	iv] variety[vərαIəti] knife[nαIf]] verse[v3s]-berth[b3θ] live[lIv]-rib[rIb]
10. 11.	luck[lAk]-lug[lAg] snack[snæk]-snag[sn safe[sef]-save[sev] family[fæmIli] lov gloves[glAvz] laug very[vɛri]-berry[bɛri] verb[vʒb]-barb[bʒb] lover[lAvæ]-robber[rz both[boθ]-boat[bot]	sack[sæk]-sag[sæg] æg] belief[bIlif]-believe[bIl ve[lʌv] feed[fid] gh[lʌf] leave[liv]] van[væn]-ban[bæn] vest[vɛst]-best[bɛst] Δbə] thank[θæŋk]-tank[tæ	iv] variety[vərαIəti] knife[nαIf]] verse[v3s]-berth[b3θ] live[lIv]-rib[rIb]
10. 11.	luck[lʌk]-lug[lʌg] snack[snæk]-snag[sn safe[sef]-save[sev] family[fæmIli] lov gloves[glʌvz] laug very[vɛri]-berry[bɛri] verb[vʒb]-barb[bʒb] lover[lʌvæ]-robber[rz both[boθ]-boat[bot] three[θri]-tree[tri]	sack[sæk]-sag[sæg] æg] belief[bIlif]-believe[bIl ve[lʌv] feed[fid] gh[lʌf] leave[liv]] van[væn]-ban[bæn] vest[vɛst]-best[bɛst] hbə] thank[θæŋk]-tank[tæ there[ðɛr]-dare[dɛr]	iv] variety[vərαIəti] knife[nαIf]] verse[v3s]-berth[b3θ] live[lIv]-rib[rIb] eŋk] they[ðe]-day[de]
10. 11.	<pre>luck[lʌk]-lug[lʌg] snack[snæk]-snag[sn safe[sef]-save[sev] family[fæmIli] lov gloves[glʌvz] laug very[vɛri]-berry[bɛri] verb[vʒb]-barb[bʒb] lover[lʌvə]-robber[rʌ both[boθ]-boat[bot] three[θri]-tree[tri] thin[θIn]-fin[fIn]</pre>	sack[sæk]-sag[sæg] æg] belief[bIlif]-believe[bIl ve[lʌv] feed[fid] gh[lʌf] leave[liv]] van[væn]-ban[bæn] vest[vɛst]-best[bɛst] hbə] thank[θæŋk]-tank[tæ there[ðɛr]-dare[dɛr] three[θri]-free[fri]	iv] variety[vərαIəti] knife[nαIf]] verse[v3s]-berth[b3θ] live[lIv]-rib[rIb] eŋk] they[ðe]-day[de] than[ðæn]-van[væn]
10. 11.	luck[lʌk]-lug[lʌg] snack[snæk]-snag[sn safe[sef]-save[sev] family[fæmIli] lov gloves[glʌvz] laug very[vɛri]-berry[bɛri] verb[vʒb]-barb[bʒb] lover[lʌvæ]-robber[rz both[boθ]-boat[bot] three[θri]-tree[tri]	sack[sæk]-sag[sæg] æg] belief[bIlif]-believe[bIl ve[lʌv] feed[fid] gh[lʌf] leave[liv]] van[væn]-ban[bæn] vest[vɛst]-best[bɛst] hbə] thank[θæŋk]-tank[tæ there[ðɛr]-dare[dɛr]	iv] variety[vərαIəti] knife[nαIf]] verse[v3s]-berth[b3θ] live[lIv]-rib[rIb] eŋk] they[ðe]-day[de] than[ðæn]-van[væn]

13.	seem[sim]-theme[θ im] sin[sIn]-thin[θ In] sum[sAm]-thumb[θ Am]				
	saw[sɔ]-thaw[θɔ] song[sɔŋ]-thong[θɔŋ]				
	kiss[kIs]-kith[kI θ] face[fes]-faith[fe θ] bass[bæs]-bath[bæ θ]				
mass[mæs]-math[mæ θ] worse[wəs]-worth[wə θ]					
	miss[mIs]-myth[mIθ]				
14.	school[skul] dance[dæns] seat[sit] horse[hors] seed[sid]				
	rest[rɛst] bus[bʌs] cost[kəst] place[ples]				
15.	zebra[zibrə] zero[ziro] zoo[zu] lazy[lezi] easy[izi]				
museum[mjuzIəm] loves[lʌvz] Japanese[dʒæpəniz] knives[nɑIvz					
eggs[ɛgz] bees[biz] Tuesday[tuzde]					
16.	sugar[ʃugəː] she[ʃi] machine[mə ʃin] shell[ʃɛl] ocean[oʃən]				
fashion[fæʃən] fish[fɪʃ] lotion[loʃən] wash[wɑʃ] wish[wɪʃ]					
shrimp[srImp] cash[kæs]					
17.	measure[mɛʒə/] usual[juʒuəl] beige[bɛʒ] garage[gərɑʒ]				
treasure[trɛʒəʲ] camouflage[kæməflɑʒ] mirage[mIrɑʒ] division[dIvIʒən]					
	occasion[okeʒən]				
18.					
19. carry[kæri] brown[braun] merry[mɛri] red[rɛd]					
	room[rum] ride[raId]				
20.	lake[lek]-rake[rek] let[lɛt]-rest[rɛst] lame[lem]-rain[ren]				
	lust[lʌst]-rust[rʌst] leaf[lif]-reef[rif] lice[laɪs]-rice[raɪs]				
law[lɔ]-raw[rɔ] lied[laId]-ride[raId] lime[laIm]-rhyme[raIm]					
	low[lo]-row[ro]				
21.	leap[lip]-weep[wip] lent[lɛnt]-went[wɛnt] let[lɛt]-wet[wɛt]				
	lane[len]-wane[wen] lacks[læks]-wax[wæks]				
22.	red[rɛd]-wed[wɛd] read[rid]-weed[wid] ride[rɑId]-wide[waId]				
	rain[raIn]-wane[wen] rise[raIz]-wise[waIz] row[ro]-woe[wo]				
	picture[pIkt(>>] catch[kæt()] gesture[d3cst(>>] cheese[t()] each[it()]				
24.	chip[tʃip]-ship[ʃip] cheap[tʃip]-sheep[ʃip] chew[tʃu]-shoe[ʃu]				
~-	chop[tʃap]-shop[ʃap] chair[tʃɛr]-share[ʃɛr] chuck[tʃʌk]-shuck[ʃʌk]				
25. $etch[it_3]-edge[\epsilon d_3]$ March[mət_s]-Marge[məd_3]					
	cheap[tsip]-jeep[dzip] choke[tsok]-joke[dzok]				
	cheer[tʃIr]-jeer[dʒIr] chest[tʃɛst]-jest[dʒɛst] chin[tʃIn]-gin[dʒIn]				
	engine[ɛndʒən] age[edʒ] cabbage[kæbIdʒ] huge[hjudʒ] orange[orIndʒ]				
27.	lamb[læm] message[mɛsədʒ] bomb[bɑm] name[nem]				
	human[hjumən] room[rum] mark[mək] salmon[sæmən]				
	smile[small] same[sem] ham[hæm]				
28.	garden[gardn] town[taun] only[onlI] nice[naIs] no[no] nail[nel]				
	animal[ænəməl] sand[sænd] enjoy[ɛndʒəɪ] sun[sʌn]				
	soon[sun] can[kæn]				

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29. king[kIŋ] tongue[tʌŋ] song[sɔŋ] thing[θIŋ] long[lɔŋ] spring[sprIŋ] bank[bæŋk] pink[pIŋk] singer[sIŋə]

[5. Procedure:]

Bobby's mother, Gloria, who is a native English speaker, read aloud some minimal word pairs and word lists such as "pet-pat," "mitt-meat," "pear-bear," "king," "lamb" etc. to Bobby and he attempted to repeat them. Through this method, I wanted to observe how well Bobby could imitate his mother and what kind of strategy he used. I also wanted to observe how reinforcement worked on him.

[6. The results of observation of minimal word pairs and word lists:]

(a) Deletion of final consonant.				
At age 4 years and 10 months	At age 5 years and 10 months			
feet[fit]→[fi-]	$bed[b\epsilon d] \rightarrow [b\epsilon-]$			
hamburger[hæmbəgə₄]→[hæmbə-]	$bet[b\epsilon t] \rightarrow [b\epsilon -]$			
gold[gold]→[gol-]	$feet[fit] \rightarrow [fi-]$			
	cab[kæb]→ [kæ-]			
	$gold[gold] \rightarrow [gol-]$			
	mirage[mIraʒ]→[mIra-]			
(b) Final devoicing and initial devoicing.				
At age 4 years and 10 months	At age 5 years and 10 months			
$love[l_{\Lambda V}] \rightarrow [l_{\Lambda f}]$	snag[sæg]→[snæk]			
believe[bIliv]→[bIlif]	rag[ræg]→[ræk]			
snag[snæg]→ [snæk]				
$edge[\epsilon d_3] \rightarrow [\epsilon t_3]$				
(c) Substitution of sounds.				
At age 4 years and 10 months	At age 5 years and 10 months			
built[bIlt]→[bIlp]	$kith[kI\theta] \rightarrow [kIs]$			
	$fit[fIt] \rightarrow [f\epsilon t]$			
	build[bUIld]→[bUIlt]			
	$fin[fIn] \rightarrow [\Theta In]$			
	$tree[tri] \rightarrow [ki]$			
	$faith[fe\theta] \rightarrow [fes]$			
(d) Addition of sound				
At age 4 years and 10 months	At age 5 years and 10 months			
No problems	thumb[θʌm]→[θʌməʲ]			

[7. Analysis of Bobby's perception and production of minimal word pairs and word lists:]

When Bobby was four years and ten months old, he couldn't repeat minimal word

pairs; therefore, his mother read a word at a time and Bobby tried to repeat it. A year later, I used the same minimal word pairs and lists of words. Bobby didn't have any trouble repeating minimal word pairs. Bobby's perception and production of words had improved, but he still used the strategies of deletion of the final consonant, final devoicing, and substitution of sounds. When he couldn't perceive words well, he said, "Wait, I can not hear that." Gloria read the minimal word pairs again and Bobby repeated them. The minimal word pairs and words which Gloria repeated were "peak-break," "seem-theme," "sin-thin," "lane-rain," "lacks-wax," "row-woe," "lover-robber," "verb-barb," "lust-rust," "song-thong," "than-van," "Tuesday," and "division." After Bobby listened to [fes] (face) and [fe0] (faith), Bobby said, "huh?" Gloria repeated and Bobby said again, "huh?" Bobby listened to them again and said, "Wait" and produced [fes] and [fes]. Gloria read again and Bobby said, "Oh, yes. What? I can't say that word. Too bad. Good bye." It seemed that Bobby could perceive the difference between [s] and [θ], but he realized himself that he couldn't produce [θ]. Then he pinched his lips with his fingers and refused to listen and repeat the minimal word pairs and word lists. Both Gloria and I begged Bobby to continue.

Gloria asked Bobby, "Look at my face." and she pronounced [fes] - [fe θ] twice. Bobby repeated them correctly. The word "faith" was unfamiliar to Bobby, but reinforcement worked on Bobby to produce [fe θ] correctly. Bobby pronounced [θ ri] - [ti] instead of [θ ri] - [tri] (three-tree). As soon as Gloria read the words again, Bobby said, "By accidentally, I said wrong thing." Bobby could perceive the sound of $[\theta]$ correctly but he could not produce $[\theta]$ correctly. This shows that Bobby had cognition of the difference of the sounds $[s], [\theta], and [t]$. Elliot cites in Child Language, "Morse (1979) summarizes the first decade of research on infant speech perception and concludes that for almost all the discriminations tested, the infant's perception is remarkably like that of adults. Almost the only exceptions are the fricatives /f/ and θ / which give trouble up to age 5." (Elliot, page 66) After Gloria read [lʌvəʲ] - [rʌbəʲ] ("lover - robber") twice, Bobby said, "I can't hear that. I thought it was [lʌvə]. It's too bad." After he pronounced [bll-] for "build," he changed it to [blld]. He realized that his production was different from his perception. Bobby produced [məra-] first instead of [mIra3] (mirage), but he reproduced [mIra3] correctly without listening to it again. He could perceive himself that he had produced a different sound from what he had heard.

Both deletion of consonants and devoicing increased a year later. It was at this time that Bobby listened to minimal word pairs and repeated them, instead of only listening to one word and repeating as he had done a year before.

[8. Bobby's perception and production in his spontaneous speech:]

At age 4 years and 10 months.

(B)=Bobby (G)=Gloria (K)=Kyoko

(B) / wi tolk a lot veri lot / (We talk a lot? A very lot.)

(G) Tell me what did you do in the school today?

- (B) / no / (No.)
- (K) Bobby, which school do you go to?
- (B) / wUd skul / (Wood school.)
- (K) What did you do today in the school?
- (B) / aI et æpəl saUs fæst sAmwen muv mækgemeri aI kæn dzempt daUn /
 (I ate apple sauce. First, someone move Macgamary? I can jumped down.)
- (K) How much money do you have?
- (B) / ðis ðæts mai mani no wan kæn kaunt wið mi ju kænt kaunt / (This, that's my money. No one can count with me. You can't count.) / faiv siks seven gets ol ðæt mani aut agen ai want get mai oun mani / (Five, six, seven. Gets all that money out again. I want get my own money.) / ai laik ðæt / (I like that.)
- (K) What is your favorite color?
- (B) / kæmflad3 / (Camouflage.)
- (K) What is camouflage?
- (B) / grin braUn and blæk / (Green, brown, and black.)
- (K) Why do you like camouflage?
- (B) / bIkaUz Iz bIkaUz bIkaUz dziaI dzo / (Because is because, because GI Joe.)
- (K) What is GI Joe?
- (B) / aI dont rili no It dʒi aI dʒo Iz Its ə faItIŋ tim /
 - (I don't really know it GI Joe is. It's a fighting team.)

At age 5 years and 10 months.

- (B)=Bobby (G)=Gloria (K)=Kyoko
- (G) Would you have some ice cream?
- (B) / αI dont want to nnθIŋ hwIts wan aI kUd tek hwIts wan sUd aI tek /
 (I don't want to nothing. Which one I could take? Which one should I take?)
 / αI dont rili ker hwIts wan hwIts wan /
 - (I don't really care. Which one?) Which one?)
- (G) Bigger.
- (B) / no / (No.)
- (G) Oh.
- (B) / jɛə bIgə wet du ju no hwat kaInd InsaId /

(Yeah bigger. Wait. Do you know what kind inside?)

- (K) Inside is the same. The back is different.
- (B) / Iz ðis wʌn θiŋ iz boθ tu hȝd tə luks /(Is this one thing? Is both too hard to looks?)
- (K) You can read this. They say how to make a peacock.
- (B) / he aI kænt rid ðæt ðæt Iz d3æpəniz aI kænt rid ðæt /
 (Hey, I can't read that. That is Japanese. I can't read that.)

- (K) How about this? This shows how to make a dove.
- (B) / \Rightarrow dAV aI want t \Rightarrow bo θ / (A dove? I want to both.)
- (K) You may keep both. Next time I come here, I will bring two origamis to Tommy.
- (B) / jεə du du It du It du It brIŋ ðə sem wənz /
 - (Yeah do. Do it. Do it. Do it. Bring the same ones.)
- (K) What is this, Bobby?
- (B) / mai batæsketý helo batæsketý / (My butterscotch. Hello, butterscotch.)
- (K) Is this Winnie the Pooh?
- (B) / no ðIs Iz not wIni ðə pu / (No, this is not Winnie the Pooh.)
- (K) How different between Winnie the Pooh and butterscotch?
- (B) / bIkoz bAtaskatj Iz dIfarant jep / (Because butterscotch is different shape.)
- (K) What did you do in school today?
- (B) / aIm not tell- / (I'm not telli-.)
- (G) Tell Kyoko, what did you do in the school?
- (B) / aI kænt rImembæ eni / (I can't remember any.)
- (K) Do you go to school or do you go to kindergarten?
- (B) / kIndəgədən / (Kindergarten.)
- (G) What is the teacher's name?
- (B) / mIs kwi- / (Miss Quee-.)
- (G) Was Mr. King there, too? Do you remember anything she said?
- (K) Where are you going tomorrow?
- (B) / aIm not telling oklæn- si grænpa and grænma/(I'm not telling. Oaklan-. See grandpa and grandma).
- (G) What else?
- (B) / nAθIŋ εls / (Nothing else.)
- (G) We'll drive up tomorrow and drive home on Sunday.
- (B) / wi kænt get wi kænt mIs sAnde skul / (We can't get-we can't miss Sunday school.)
- (K) Can I go to Sunday school?
- (B) / ənən bIkoz ju ar tu bIg goIŋ tə maI klas ju ar tu təl /

(Uh-uh, because you are too big. Going to my class, you are too tall.)

- (K) Does your mommy go to Sunday school?
- (B) / əhən bat nət In mai klæs / (Uh-huh, but not in my class.)
- (K) How about your brother? Does your brother go to Sunday school?
- (B) / əhən bʌt nɔt In maI klæs / (Uh-huh, but not in my class)

(K) Why?

- (B) / tu bIg / (Too big.)
- (K) How about leaving Bobby here instead of taking him to Oakland?
- (B) / no aI wIl kAm wIð / (No, I will come with.)
- (K) What is your brother's name?
- (B) / tɔmi / (Tommy.)

- (K) It is strange. Some people call him "Tom." Sometimes your mommy calls your brother "Thomas."
- (B) / aI dont ker / (I don't care.)
- (K) What is your name? Do you know?
- (B) / hwat Jud aI tel ju / (What should I tell you?)
- (K) What's the difference among Bobby, Bob, and Robert? What is your name?
- (B) / bobi mal nem Iz not robot / (Bobby. My name is not Robert.)
- (K) What is your name, Bobby or Bob?
- (B) / mai riəl nem iz bob / (My real name is Bob.)
- (K) What is your mommy's name?
- (B) / glorIə / (Gloria.)
- (K) What is your father's name?
- (B) / dIk / (Dick.)
- (K) Who is Richard Jones?
- (B) / aI dont no / (I don't know.)
- (K) If Mr. Bernhardt lived here, would he be your grandpa?
- (B) / no hi wIl bi $nA\theta In / (No, he will be nothing.)$
- (B) / aI wIl brIŋ maI ɔrIgami wIð mi / (I will bring my origami with me.)
- (K) What are you going to make with origami?
- (B) / nAθIŋ aI wIl kip ðIs nενσ du εniθIŋ / (Nothing. I will keep this. Never do anything.)
- (K) I see many pretty pictures here. Is this Tommy?
- (B) / mi ɛvrihwɛr / (Me. Everywhere.)
- (K) How do you know?
- (B) / bIkaUz Its maI bUk jɛs maI bUk aIm nət goIŋ tɛl ju /

(Because it's my book. Yes. My book. I'm not going tell you.)

/ hwat ju want tə si maI dəg sʌmhetaIŋ ðæts maI dəgi dɛd/

- (What you want to see? My dog something? That's my doggy. Dead.)
- / lUk ət hIm / (Look at him.)
- (K) Do you remember your dog's name?
- (B) / d3Ipsi aI olwez rImembo, / (Gypsy. I always remember.)
- (K) Oh, you were so cute.
- (B) / hwer hwer hwer / (Where? Where?) Where?)
- (K) Here.
- (B) / bæk wAn mor want to si laIk o teri ber hwen aI woz o lItol / (Back one more. Want to see like a terry bear when I was a little?)
- (K) How old were you that time?
- (B) / aI dont rImembə hwer Iz ðæt teri ber maIn /
 - (I don't remember. Where is that terry bear? Mine?)
 - / ðæts mai braððiz baik ðæts mai kæmerð/
 - (That's my brother's bike. That's my camera.)

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/ luk luk wet ðar mai tari bar / (Look, look, wait. There my terry bear.) (K) Do you still have this bear?

(B) / no hi Iz dɛd hi Iz gɔn gUbaI / (No, he is dead. He is gone. Good bye.)

(K) What is this?

(B) / pi wi pi wi Iz fænð / (Pee Wee. Pee Wee is funner).

[9. Analysis of Bobby's spontaneous speech:]

(a) Deletion of final consonant.

At age 4 years and 10 months	At age 5 years and 10 months		
No problems	telling[tɛlīŋ]→	[tɛlɪ-]	
	Queen[kwin]→	[kwi-]	
	Oakland[oklænd]-	»[oklæn-]	
	nothing[n∧θIŋ]→	[плөі-]	
(b) Substitution of sounds.			
At age 4 years and 10 months	At age 5 years and 10 months		
No problems	teddy[tɛdi]→[tɛri]		

From Bobby's spontaneous speech at age four years and ten months, I couldn't find any deletion or substitution of sounds. Intonation was an important part of communication for Bobby. Bobby used rising intonation for questioning and asking instead of word order: for example, "We talk a lot?" and "First, someone move Macgamary?" He used past tense even though he put the auxiliary verb "can" in "I can jumped down."

From Bobby's spontaneous speech at five years and ten months, I observed deletion of final consonant in "I'm not telli- [tɛll-]," "Miss Quee- [kwi-]," and "Nothi- [nʌθl-] else." He produced [teriber] (terry bear) instead of [tediber]. I also observed some syntactic mistakes: for example, he used a double negative in "I don't want to nothing." He used object "me" instead of nominative "I" and omitted a verb in "Me, everywhere." He put an indefinite article in "I was a little." He used "is" instead of "are" and put an extra "s" after "look" in "Is both too hard to looks?" He didn't put "do you" and he also put an extra "like" in "Want to see like a terry bear when I was a little?" He didn't put subject "I" in "Never do anything." He used "funner" for "more fun" in "Pee Wee is funner." He hadn't acquired the difference between "bring" and "take," and "come" and "go" clearly. While he was in the family room, he was going to take two packages of origami to his room. He said, "I will bring my origami with me" instead of "I will take my origami with me." Bobby and his family were going to Oakland. Bobby said, "I will come with." He should use "go" instead of "come" because he was going to Oakland with his family. Elliot cites that the children found go and come easier than bring and take. (Elliot, page 146) Bobby also didn't use an auxiliary verb "do" in "What you want to see?"

It was obvious that Bobby's structure had developed dramatically in a year: for example, he put more words in a sentence. It seemed that he had acquired word order in

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such interrogative sentences as "Which one should I take?" and "Is this one thing?" Especially, he corrected himself from "Which one I could take?" to "Which one should I take?" He had acquired many auxiliary verbs like "would," "could," "can," "do," "should," and "will." He had acquired present tense, present progressive, past tense, and future tense. He had acquired some indefinite pronouns such as "nothing," "both," and "any." He had acquired comparison but not very well because he understood "big" and "bigger" but he used "funner" in "Pee Wee is funner." Bobby had learned the rule "big-bigger," so he had applied this rule to "fun" saying "funner." This showed that he was learning or acquiring the rules of comparison. He still used rising intonation for questioning: for example, "My dog something?" and "Bobby" and "Bobby clearly hadn't learned or acquired about the names "Bobby" and "Bob" are shortened form of the name "Robert" and that "Dick" is from "Richard" and "Tommy" are from "Thomas."

[10. Conclusion:]

There are four language acquisition approaches: the syntactic approach, the behaviorist approach, the cognitive approach, and the functionalist approach. The syntactic approach focuses on syntactic development, the behaviorist approach focuses on imitation and reinforcement, the cognitive approach shows language development is closely related to cognitive development, and the functionalist approach focuses on the function of language.

From my observation of Bobby's speech, I realized that all four language approaches affected his language development. First, he demonstrated the Language Acquisition Device which represente an innate capacity for learning a natural language. Bobby created his own sentences like "Pee Wee is funner" and "I don't want to nothing." These sentences would not be produced by adults who were educated native English speakers. On the other hand, imitation and reinforcement were important for Bobby. He imitated his mother's pronunciation well but when he couldn't imitate correctly, his mother pronounced the same word a couple of times and then Bobby could pronounce it correctly. To express his thoughts and desires, the functionalist approach was important when Bobby was age four years and ten months. He used rising intonation for asking and questioning. A year later, he still used intonation for questioning. Sometimes he showed his expression by gesture: for example, he pinched his lips with his fingers. It showed that he didn't want to talk. He used intonation and gesture as a function of language.

From my project I learned that to acquire language and to learn language, the four language approaches affect the native English speaker equally. Bobby's mother played a very important role as a model for the child to imitate and by providing reinforcement and correction of language.

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