

# **JULIANOTES**

## **NINE TO TWENTY-FOUR MONTHS**

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in collaboration with

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What follows is a computer log of observations and anecdotes on cognitive and communicative development, with particular reference to language and gesture. These observations were collected by the parents of one child across a one-year period. They were not collected systematically, and do not meet current criteria for an objective, scientific study of language development.

## JULIANOTES 1

Julia was born March 23, 1983, at 3:45 a.m., by caesarian section after a 24 hour non-progressive labor; she weighed in at exactly 8.5 pounds, just under 21 inches long. Monitoring indicated she had done fine throughout, and she was extraordinarily alert at birth. The nurses all commented to George and to me that both her physical strength (i.e. holding up her head and looking around) and her alertness were remarkable. We began the relationship staring into each other's eyes, and continued this kind of intense eye contact in the hospital, in the much-interrupted periods in the middle of the night that constitute the official parody of 'rooming in'.

I made a decision early on not to carry out systematic recording of Julia—a decision based less on ideology than on a realistic assessment of my degree of disorganization. I've quickly learned, however, that as a writer and teacher I inevitably fall back on my own anecdotes to illustrate points. To keep me honest at least in that regard, I have decided to record a few notes of her communicative and cognitive progress.

My first impression, other than amazement at her alertness, was amazement at her incompetence. The recent literature on infant development is filled with recounts of how much more a baby can see, hear, discriminate, expect, predict, etc. than we ever thought. Such findings are invariably accompanied by resounding critiques of Piaget, who attributes so little to the child in the way of an initial behavioral endowment. Note, however, that these studies are always based on group data, and the effects are usually fragile at best. Observing my own child, in natural settings, I became a born-again Piagetian. The simplest discoveries, e.g. how to bring hand to mouth, seemed to take many weeks, apparent successes followed by days of backsliding. The one 'new wave' experiment that I did try, with some success, was elicitation of tongue thrusts in the first few days, in apparent imitation of my own. I don't know what it means, but the phenomenon seems real to me now.

Julia was a fussy infant, qualifying as 'colicky' by 3 weeks of age. We learned how to fend off attacks with a mechanical swing, trips in the car, and constant attention, but it was exhausting. I became convinced that the 'ragged nerves' theory of colic has more substance than the stomach ache theory, in any case. Motor development proceeded apace: at 8 weeks, in a visit to LA to see Jane in transit, Julia turned from her stomach to her back (but not vice-versa—unfortunately so, since she could at that time only fall asleep on her stomach).

I had been complaining about her disinterest in toys and objects, looking forward to the day when she could be distracted by a non-social stimulus. At 7 weeks, right after one of my complaints, she sat on a colleague's lap and stared and poked at his watch for 5–10 minutes, thereby disqualifying me forever as a sensitive observer.

Although there were no examples of vocal imitation before 12 weeks, Julia was very vocal: cooing sounds and various vowels, as the literature would suggest. In addition, she discovered a curious scheme of making sounds while inhaling, i.e. 'talking inside out', which lasted for several weeks.

Despite the fussiness, Julia also smiled early: clear exogenous smiling between 3–4 weeks. In fact, we almost came to

dread the big smiles, because they seemed to involve so much excitement that major crying was almost sure to follow. Fortunately, this association disappeared by the time we left for Italy, when Julia was 11 weeks old.

We had certainly dreaded the plane trip, but it went quite smoothly: she socialized with everyone before and after a 6-hour nap. Before Rome, we were at Lake Como where I played full-time Mama while George attended a physics conference. Alone with Julia all day, I may have experimented more—or perhaps the changes were inevitable and unaffected by my presence. In any case, two things happened: (1) The first week there, Julia began to respond to vocal imitation, so that volleys of vocalization up to 12 turns long took place for several days—only to disappear with essentially NO other signs of imitation for many months to come; (2) Sitting in her swing, she began to reach for objects on her tray: successful one day, she returned to her swing the next day and now tried to reach them with her mouth, apparently unable to recall the successes of the day before. However, by the time we took the long car trip to Rome (between lusty bouts of crying), she delighted in tearing up bits of paper, and picking up and holding objects with considerably more success. I had discovered a few meager moments of hand-watching during this period; nothing more, ever again.

I do have one particularly clear and poignant memory during the Como trip. We went on a long ride around the lake one afternoon (alas, cars stopped calming her once we got to Italy—whether that bears a cause-and-effect relationship to Italian traffic I will never know). To calm her crying, I tried singing, inventing a litany-like song with all her nicknames in alphabetical order as follows: "Little (bunny), little (bunny), J(B), Julia (bunny)." The song did indeed seem to help—and has ever since. At one point I stopped the car before a tunnel, to make sure the lights were working. Julia, whose car seat was placed facing backward in the front seat so I could watch her, began to smile excitedly as we pulled over. When I started the car again, she cried in what did sound for all the world like heartbreaking disappointment. It was clear to me that she thought I was stopping to play with her; somehow I think her new need/longing for face-to-face interaction had something to do with her new dislike for cars.

Several changes occurred in Rome during our six-week stay. We drove into town on her 3-month birthday, and just as Spock had promised, Julia ceased to be a fussy baby that very day. During the Italian visit, she was bombarded with stimulation: new babysitters, long walks in town with constant attention from strangers, trips to restaurants. She became even more social, smiling at everyone without prejudice. One of the rare exceptions was a brief but severe upset after touching friend Anthony's rough face with a day's growth of beard—a clear contrast to both her own father's long beard and the smooth faces of women.

The Roman babysitter discovered two things that I initially refused to believe until I saw them: (1) on seeing the front pack, she became very excited, in apparent anticipation of a walk to come; (2) approaching or near the swing, she would occasionally lean and reach toward it.

The “ciuccio” or pacifier was her constant companion in this era, and she became better and better at retrieving it (but still much slower than I ever would. have believed, given its ubiquity).

Although Julia became much prettier than she had initially promised to be, people continued to comment above all on her surprising alertness and apparent intelligence, and on her straight, strong little back (Italians believe that infants are supposed to remain horizontal at all times until 5–6 months of age, and they were both fascinated and appalled by our front pack). Toward the end of our stay, Julia became quite accomplished at sitting with support, and even without support for brief periods.

Her life changed considerably after our return. At five months she began going full-time to a babysitter, Cindy, and taking one supplementary bottle per day. Neither George nor I had any success getting her to take the bottle; Cindy succeeded the first day, with no problems thereafter (thus initiating a trend that would be seen again in many forms...). At six months we began solid foods (she still did not sleep through the night, nor would she before 8–9 months of age, but we hoped fervently that cereal would help. After a few days of enjoying the novelty, she began to resist being fed—her pattern ever since. From seven months on, we stopped trying, and let her feed herself what she would in finger foods. Fine movements of the hand were by now excellent, a delicate pincer grasp, thumb and forefinger, that enabled her to pick up crumbs as well as more dangerous objects.

Pulling to a stand occurred around 6 months, in the crib, proudly recorded on Polaroid film. Although she had gotten up on all fours and rocked in frustration from 4 months of age, she did not crawl until her 7-month birthday—whereupon she crossed an entire room, heading for electric wires. We tried her out in a walker around this time, and she quickly figured out how to use it to move backward—but she couldn't seem to master forward motion.

When Julia had been crawling for less than a month, we had one episode that seemed to show surprising ‘maze memory’ (if not representation). She had been carried into the back study, but had never attempted such a long trip herself. One afternoon she began whining while sitting with George in the living room, and started a long and apparently quite deliberate journey through the hall, the kitchen, and down the back hall aiming directly at the study (where she had seen me an hour before), whereupon I heard her approaching whines and came out to greet her. Something similar happened a couple of weeks later in Holland, when she had been left in a strange house to ‘sleep’ surrounded by mountains of sofa pillows meant to create a safe barrier. While we adults sat in the living room and talked, she managed to surmount the obstacles and follow our voices through two rooms until she found us. “Lassie come home.”

We bought Julia her first ‘non-edible’ book around 6 months, a book about a caterpillar, with holes of various sizes for inserting fingers. Her patience and interest in the book surprised us, and we bought several more the next week. There was a linear increase in book interest from that time forward; by 8 months she even seemed to follow my pointing from one figure to another.

Between six and seven months, I carried out a modest and unsystematic amount of Piagetian cognitive testing. Removal of one screen to retrieve an object seemed clear at this point; with more than one screen, I'm not sure whether it was Julia or the Experimenter who became confused. In a restaurant, in her portable chair, she gave a virtuoso performance on means-end relations: pulling in an object on a cloth support, by a horizontal string, and on one trial with a vertical string pulled up in at least one hand-over-hand movement. Pointing-for-self, index finger carefully extended to examine close objects, also appeared in this period. Still, however, no signs of any interest whatsoever in imitation, old models or new, although she would watch in fascination as I tried to elicit something.

In this same time period, Julia's first ‘game’ appeared: taking off hats put on her head by an adult; this soon generalized to taking hats off adult heads, and off the heads of various toy animals. One of the more interesting aspects of this game is that it had been ‘taught’ to her by our friend Barbara who babysat for us one evening. I had no idea that the game was now in Julia's repertoire, and yet I found myself playing it with her the next day. Somehow Julia had given me signals indicating that this was a game that would now work; but I have no idea what the signals were. It SEEMED to be a passive game, but obviously at some level Julia initiated it. Julia's role in this game became more and more active. By Christmas she was attempting to put hats on other people's heads herself, albeit unsuccessfully. For the last two weeks she has reliably put any piece of cloth at all on and/or over her head, sometimes parading around the house with it.

There is a potential confusion, however, between “Hat” and peekaboo. Julia had begun to enjoy peekaboo passively around 6 months (coinciding with standing up in her crib, which inspired George to try it out). Her active placing of hats on heads coincides with actively putting cloth over her own face or an adult face, so that it is often difficult to figure out which game is which or whether they have indeed blended together entirely. Curtains reliably elicit a jerking back-and-forth lateral movement, however, which is quite distinct from the vertical placement movement associated with wearing hats.

Julia learned to take off her socks between 8 and 9 months, and treats socks very much like a ‘transitional object’: carrying them all over the house (sometimes not letting go literally for hours!), shaking them, and creating a new game of putting socks in the adult mouth (a game that does not have the universal appeal of, say, pattycake....). As of 1/20/84, there are tenuous examples of socks and shoes being held in the direction of her foot.

She began ‘singing’ in the backseat of the car some time in the period between Italy and her 7-month birthday, not in obvious imitation but certainly augmented if there was music and if I sang along. She sometimes appeared to beat time with her hands on the car seat. At the same time, however, she also seems to enjoy prolonged sound in the car because of the vibration set up by the moving vehicle.

With her new, sharp little teeth Julia began the nasty habit of biting during breastfeeding, somewhere around 5–6 months. I cried out and yelled “Don't bite!” as other mothers had suggested, and she did indeed seem to learn to inhibit biting. The

phrase “Don't bite” in particular seems to make her stop, but this is confounded with tone of voice and with situational cues. As of 1/20/84, biting seems to be a much more controlled teasing game: Julia stood in my lap and tried to ‘bite’ my nose, putting her teeth around it and laughing but not pressing down. I then did the same to her, eliciting hysterical laughter, and we went back and forth taking turns at ‘not biting’ for about 3 minutes. (This game now seems well established, having been initiated by Julia several times across the next few days.)

Consonants began to appear in her stream of babbling between 6–7 months, but very clear CV consonants did not occur until closer to her 8-month birthday, when she and I spent two weeks in Holland with the Clarks (where Julia went to a Dutch babysitter every day). The Dutch babysitter, upon finding out that DADA is daddy in English, tried training DADA constantly day after day. I don't know if this increased the output or not; but Julia did say DADADADADA about a thousand times on the trip home—until precisely the moment of seeing her daddy, whereupon she became entirely mute.

Julia's motor skills leapt forward on the Holland trip, with vast amounts of floor freedom and a world of 4-year-old boy toys to explore. She pulled herself up to high shelves, stood on tiptoe, and reached to pull things down: Seeing her diving head-long off couches, Eve and Herb suggested I initiate and practice the command “Feet first!” while maneuvering Julia into the right position for descent. I began the practice then, but spontaneous backing down on her part is only obvious now, at nine months of age. The command “feet first” seemed to make her hesitate (as did her name, or the word “no”) between 8 and 9 months, but I would not be entirely comfortable calling this language comprehension.

Our sleeping-through-the-night experiment began in earnest upon the return from my exhausting nights in Holland. Two weeks later, after some marginal success, we left for Florida and New York, a Christmas voyage, with me (finally) in great anticipation of changes around the 9-month boundary that I had studied for so many years. Again the trip brought intense stimulation, although it is not always clear how much changes before my eyes and how much I see only because I am around much more. Florida brought another 4-year-old boy; Andrew, whom Julia treated with the same fascination and adulation accorded to Damon in Holland. Andrew did not quite share Julia's enthusiasm (nor had Damon). In any case, whatever cognitive growth took place during that period was evidenced more by watching than acting, as Julia followed her hero's every move. Diane and Jerry's great dog Toad was a particular favorite, and Julia followed him wherever she could—including up and down stairs. To my relief, she began to show signs of mastering “feet first” in this her first serious encounter with stairs. There were still no signs of imitation or of language comprehension during the visits, but changes began in earnest immediately after our return.

During the trip home, I noticed two examples of increases in memory: (1) She loved to play with an enamel bracelet that I had been wearing, but did so much damage to it that George surreptitiously hid it at one point. A couple of hours later, Julia began searching up my sleeve and turning my arm over, apparently in search of the bracelet; (2) On the first of our two airplanes, she had flirted extensively with a passenger in the seat

behind; on the second flight, a few hours later, she looked over and around the seat in apparent puzzlement, several times, as though she expected her passenger friend to be there. Two other, perhaps more compelling instances of memory occurred the next day: (1) Julia desperately wanted my glass of white wine, and in contrast to the good old days when she could be distracted, persisted in reaching and climbing toward it no matter where I put it. I finally concluded that she might be thirsty, whereupon George took her to the kitchen and poured apple juice into a regular glass. She refused to take it—until he poured it into a wine glass and gave it to her that way! (2) Even though she might occasionally cry bitterly for a few minutes when put down for a nap, she had never seemed to ‘hold a grudge’ upon awakening; that day, however, when George came in to get her after a one-hour nap (a nap that had been taken unwillingly despite sleepy rubbing of eyes), she turned her back to him and faced the wall while whimpering—angry and hurt, or at least so it seemed, for several minutes until distracted by play.

Before Christmas, Julia began taking objects out of containers (with regular practice at her grandparents' in emptying a basket of Christmas cards one at a time). In particular, she stood at her white plastic toy boxes and pulled things out, dragged clothing out of suitcases, and pulled whatever she could out of open drawers. I tried to get her to build a two-block tower before Christmas, and she did indeed try, but failed. She could take rings off a ring stack relatively well at this point, but still needs help (although she tries patiently) in putting them back on, several weeks later. After Christmas, she began clumsily putting objects back into containers. This behavior became more and more skilled so that by 1/19/84 she was delicately inserting the little Fisher-Price man into a small nesting cup. This was sufficiently difficult, however, that she sought out (seemingly quite purposefully) a larger container from among her toys and repeated the drop-in/shake-out sequence with that. I bought her first shape box immediately after Christmas, and she was quite proficient at throwing blocks in when the top was off. She also tried with occasional success to insert blocks through the holes.

She has another shape box with individual doors for removing individual blocks—still a very difficult toy for her. The box has a little head in the middle, which cannot be removed but squeaks when pressed down. One of Julia's first clear-cut imitations of a novel model (at 9;2) occurred with this toy: I batted the head down with a block several times; she picked up a different block and batted it on top of the head as well.

Cindy tells us that waving bye-bye was established already by our first week back; we did not see it ourselves until a week or so later. The eliciting stimulus did not appear to be linguistic, but rather, the event of someone relevant getting up and going toward the door. Now, two weeks later, waving by someone else can (finally) elicit waving by Julia, albeit sporadically. This morning (1/18/84) I could have sworn that she said “hai” while waving to me as I went through the bedroom door. (Repeat observation of same 1/19/84). On 1/20/84 there are several examples of waving while saying what seems to be a blend of hi/bye, particularly when we get up to go out the door at the babysitter's. This includes elicitation of waving with just the

sentence “We’re going to go bye-bye now”, before we actually got up to go.

The much-heralded events of showing, then reluctant giving, then more spontaneous giving, have also occurred between Christmas and the middle of January. One might hallucinate that her “DADU” sounds during object exchanges are an attempt at our own oft-repeated “Thank you”, but I wouldn’t swear to it. Still no signs of communicative pointing as defined in our multitudinous papers on the topic.

The closest thing to ritualized requests are: arms extended to be picked up, giving objects to be operated upon (in particular books to be read), a few clear instances of going over to the highchair and patting it while looking at me (around dinner time). No particular request gestures, although a repetitive sound of MAMAMAMAMA has, for a few days now, occurred in laments—usually while crawling up on me; or reaching toward me from the playpen, but George does get it too. Whines have gotten quite insistent and irritating, with her eyes fixed on us in undeniable expectation whatever the goal. This behavior is particularly noteworthy in the highchair when she is either bored with the food currently on her tray or interested in the food that we have instead. In general, her babbling seems to have increased greatly in complexity in the last week, with more and more ‘word-like’ productions. In particular, there are more complex vowels such as an “oi” diphthong, and more variation in consonant-vowel combinations.

Pattycake has also emerged at last. Three weeks ago she received a book of nursery rhymes with a pattycake page, and we modelled pattycake at every reading. She would not imitate, and resisted when we tried to mold her hands while reciting the rhyme. Last week, however, we sneaked in to watch her chattering in her bed alone after a nap—and found her, surreptitiously, practicing at clapping her hands! Within a few hours, she clapped spontaneously, on seeing the pattycake page in the book, and has given us the book (rejecting other books) several times while clapping and looking expectant. The clapping scheme is now generalizing, produced in a wide variety of contexts, with or without initiation by an adult.

Three days ago, while Julia was home with a bad cold, I pulled out her toy telephone and (as I have many times in the past) pretended to talk to someone, and then handed her the phone. This time she put it up in the general vicinity of her ear, and then handed it back to me. This exchange went on for about five minutes, and George has elicited it successfully several times since then.

1/18/84. George took Julia to the kitchen; saying “You want some apple juice?” while bringing out the bottle. He swears that she repeated, twice, “apple juice”. Our efforts to replicate the experiment the next morning failed, however.

1/20/84. This morning, while I was changing her diaper, Julia picked up a shoe and said to me something that sounded very much like “djoo”. I pointed to it and said “Yes, that’s a SHOE”, and she then said “Shhoi”.

1/22/84. “Shoe” is quite clearly established now, made upon seeing and/or picking up any of several shoes. The phonological form is quite variable (shoi, djoo, ssshhh, sssss, soooo), but the context is reliable.

This weekend her manipulation of objects climbed to new baroque levels. She has a set of 12 hexagonal, multicolored nesting cups, which she played with for over 20 minutes on Friday. Sometimes she successfully inserted a small cup in a large one (carefully adjusting the angle of the container cup to receive the insert); other times she would set a larger one inside a smaller one by one corner, thereby creating an ersatz container/tower. With this apparently random combination of nesting behaviors she actually managed to nest five containers! The nesting scheme is generalizing to other objects as well. For example, this morning she carefully inserted her shoe inside George’s several times.

The original hat/peekaboo complex is now becoming a richer and more varied dressing game. She pulled out batches of dirty laundry this morning, repeatedly pulling articles over her head or around her shoulders (she can insert her head through the leg hole in George’s underwear, a movement that she may connect with putting on her own shirts when I dress her). Both this game and nesting schemes are sometimes demarcated by pattycake when finished—hence pattycake seems to have blended with applause. Yesterday morning we tried a different dressing scheme, putting glasses on my nose, George’s nose and her nose. When it was her turn she quite competently held her head back to keep the enormous glasses balanced on her tiny face. A little later she tried several times to put her shoes on my face—so this is either a total confusion of dressing, or a creative blend of schemes (take your choice).

Julia is now on the tenth and final day of an antibiotic with a particularly pleasant taste. She at first resisted medication, as she resists having anything forced at her. However, George cleverly decided to use the dropper from her vitamins (which she likes), so that we began a routine of wrapping the green towel around her barber chair fashion to prevent spills, and administering three droppers-full of the pink medicine. This morning she put her head back and sat in position as soon as George brought out the towel, opened her mouth expectantly, and punctuated the removal of the towel at the end with clapping. A lip smacking and “yum” sound have occurred within this same routine, and may be generalizing to other foods.

A couple of observations on comprehension: When we visited Cindy on Friday (to see her new infant), she mentioned that she is sure Julia has understood the word “bottle” for about two months. The evidence is meager: Julia looks up and gets excited or expectant when Cindy says “Do you want your bottle?” Yesterday at the hardware store, I had been wheeling Julia around the aisles for some time when I said “Where’s Daddy?” She turned around and searched quite systematically until she finally saw him.

1/23/84. Waving is now quite clearly elicited just by the word “bye”, e.g. this morning when I read the phrase “Good-bye sun” in one of her books. George has the ‘feeling’ that a lot more comprehension is underway, although it is hard to document. For example, yesterday he set up her wooden rocking horse (which she can actually ride!). When going for the thousandth time (at her, insistence) through her ‘Animal sounds’ book, he pointed out the relationship between “horsie” in the book and the rocking horse. Since then, when looking at the horsie page (which she now seems to seek out), she looks

carefully back and forth as though comparing the two horses feature for feature. She also seems to recognize favorite foods when they are pulled out of the cupboard (e.g. the raisin box). Her requests are getting more and more deliberate, systematic and insistent (one might also say annoying....), in sound and in gesture. This includes an “AH!” angry request sound that sounds just like the one that I have parodied in my talks on this topic for years.

It was quite clear yesterday after I took off her sock and shoe, that she was trying to put each of them back on against her foot. With her shirt, this morning, she pulled away from me and tried to put it over her own head, protesting when I tried to put it on her myself. Cup nesting and stacking proceeds apace, although she hasn't quite matched her virtuoso five-cup nest from last Friday. George thinks she says “sock” as well as “shoe”, but as always I remain skeptical. Finally, the babysitter told us that Julia quite clearly imitated “bye Jayna!” last Friday (but would not repeat the performance when asked).

1/24/84. There are some reliable changes in the use of pointing in the last few days, a shift from a ‘point-for-self’ in up-close observation, to pointing at interesting people, objects or events at a distance. This includes pointing at me and smiling. However, I have not yet observed her turning to look at me while pointing at some third party, i.e. the quintessential evidence for communicative pointing. Giving is now so well established that she will cross the room to give me something, especially a book that she wants me to read.

2/1/84. There have not been many changes since the last entry, but some interesting problems have been posed. Requests are ever more varied; if we do anything interesting involving an object (book, mechanical toy, hand puppet) she will hand the object back to us, wait expectantly, and protest emphatically if we do not obey. The bye-bye scheme is quite well practiced now; it seems to have been followed, however, by a new phenomenon of crying and upset when we get up to leave her at the babysitter's. Departures are apparently much better understood. Jaylene tells us (as did Cindy 3 weeks ago, but we didn't believe it) that Julia knows when it is 4–5 o'clock and we are due to arrive soon. She watches the door, fusses, jumps at sudden sounds. She has not been 100% well the last few weeks: she is on her second antibiotic, with ear involvement and an endless runny nose, taking 3-hour naps some days. I would not be surprised if this has slowed things down, though she is certainly never listless. In any case, I would not want to claim any advances in language comprehension or production over the last entry. There are some changes in gestural schemes, but these present a very interesting problem of interpretation. Specifically, the same hand motion seems to be applied with variation to a number of distinct contexts, leading to the question “Is this one scheme or six?”: (1) bye-bye (as described above, up-and-down hand motion); (2) hair brushing (back and forth movement in the general direction of the head, with the hair brush, applied to her own head or ours—but only with heavy contextual support, both gestural and verbal); (3) patty cake (back-and-forth hand motion of two hands, one against the other, as described above); (4) wiping the floor, elicited this morning for the first time: Julia watched me wiping up the floor around her highchair with a paper towel, and then, with a babywipe already in hand, wiped

back and forth on the floor with a lateral motion); (5) first in imitation, then spontaneously, she moves her Fisher-Price bus back and forth on the floor (so far no other vehicles have been honored with this scheme); (6) pat-the-horsie, on or by her rocking horse, following an analogous gesture by us and/or (maybe) the phrase “Nice horsie, nice, nice....” (she has similarly stroked and patted several other toys on request, and will pat George or me in response to “Nice mommy/daddy”). What are the boundaries of this gestural event? Is it one multipurpose scheme acted out in several planes, or does she believe the actions are separate? This is similar to the meld of dressing/peekaboo/hat described above. Only the telephone scheme currently stands alone, unconfounded in form or context. The problem seems very analogous to the issue of homophony in language, discussed widely in the literature.

There are a couple of weak changes in language: in contrast with the sound MAMAMA in request/laments, DA seems to function more and more like a declarative or attention-directing and orienting sound, particularly while pointing; and yet I could not clearly say that she points communicatively, expecting a response from us equivalent to the clear expectations in giving and showing. When George arrived to pick her up today, however, she said DADA quite distinctly when he came in. Speaking of homophony..... Yesterday at Jaylene's she was holding part of a cookie firmly in hand when I came in the door and picked her up; she said “ca” (a sound rarely made in random babblings) while looking down at her clenched fist. Shoe-like sounds still occur, in the right contexts; today, I asked her to give me the shoe and she did so (but, quite honestly, shoes were also the most salient choice in that context).

I have tried further object permanence testing. Although confusions and distractions are rampant, persistent searches of several screens are not uncommon. On a couple of occasions (e.g. hiding the Fisher-Price man in my hand and dumping it under my blouse or skirt) she seemed to infer one invisible displacement; on other invisible displacements, she acted utterly mystified. I can conclude little. Her interest in nesting cups and the other virtuoso manipulative games has waned; yet, when she wants to, she seems to get better and better at fine motor activity (e.g. placing the man-in-the-turtle tub toy carefully into its appropriate hole, several times in succession, while the container bobbed up and down in her bath and hence presented great difficulties as a target). Similarly, her rapt interest in each and every page of a book has given way to quick boredom by page 2; instead, she seems to delight in handing us books one after another. Of course, I went through periods in which I felt that way about cheap novels.....

2/5/84. Today on two occasions she seemed to say “book” while picking up or looking at a book. However, as with all her word-like sounds so far, the sound could at best be described as a vague aim at an articulatory target. It is still quite ambiguous. If I give her all possible benefits of the doubt, her productive vocabulary would currently consist of the following: Hi/bye (a related sound is now made in playing telephone, with receiver to ear); *shoe*; *da* or *dada* (as an indicative/declarative sound in excited observation of objects; maybe also, as a name for daddy); *mamamama* (as a general request); *cookie/cracker* (“ca”); *book* (sounding more like the German “Buch”); *mmm* or *yum* as

a comment on preferred foods. Her gestural repertoire would include the following: waving, pattycake, telephoning, brushing, wiping, patting or caressing, over-the-head dressing, shoe/sock to foot, pushing the car. I've excluded the giving/showing/pointing complex from this cadre of proto-symbolic conventions. Another still more ambiguous case occurred yesterday: seeing her car seat on the floor at the babysitter's (where she had never seen it before—indeed never outside of a car at all) she climbed up in the seat and sat down. Is this 'sitting itself', or a recognitory scheme of the "I know what this is for..." type? Drinking from bottles or cups still seems to be "the thing itself" rather than a recognitory scheme. The same can be said of opening books and turning the pages. But more than ever before, I am aware of how ambiguous the passage from action to symbol really is.

Jaylene reported Julia's 'first step' Thursday, and claimed that it happened again Friday. We still haven't seen it, but she is standing alone without support more and more often, and for longer periods of time. Walking may well be about to happen.

Being around Jayna, who is now eight months old, seems to have had two effects on Julia. First, she has gone back to her "ciuccio" or pacifier with a vengeance (coupled by a new and perhaps final lack of interest in the breast). Second, she has taken to a kind of silly excited laugh that she never produced before, but which bears an uncanny resemblance to happy little Jayna's typical demeanor.

2/20/84. There have been few entries recently, largely because little has changed, at least overtly. Indeed, some of the schemata that were active a couple of weeks ago have virtually disappeared—except for a wide proliferation of petting/caressing, due perhaps to recent exciting encounters with dogs and cats. This includes petting the appropriate animals (dogs, horses, cats) in books. I had not seen pattycake for a long time, but elicited it with no trouble on showing Julia the pattycake page from her nursery rhyme book (which had disappeared from view for a couple of weeks). So I suspect all those schemes are still 'in there', but she seems to have lost interest after mastery as rapidly as she did in her very early accomplishments like handwatching and vocal imitation at 3 months. I wonder whether this will be a stable aspect of her temperament. Julia still isn't walking, though one step progressed as far as four a couple of weeks ago. She also stands up without support, and can even lean over and pick up grass and flowers from a standing position. However, she seems to have adopted a spraddle-legged stance that is indeed quite good for standing but not a convenient position from which to begin a walk. Communicative pointing, looking back and forth from referent to addressee, clearly occurs now—but this has not been accompanied by any decrease in pointing entirely for herself. Her manipulative play seems, if anything, to have taken a step backwards. For several weeks now she seems much less interested in nesting cups, blocks, etc. However, she has been newly introduced to jigsaw puzzles and spends considerable time trying to fit pieces into the appropriate or inappropriate holes.

Breastfeeding is finally over; perhaps as a result, she is more interested now in cuddling for its own sake. I have been trying to teach her to hug toy animals and other soft things, but I don't think she has quite caught on. However, if told "Don't

pull" when she is frantically petting a visiting dog or pulling parental hair, she bursts into furious tears. We are trying to be consistent in our 'discipline'; it certainly isn't easy!

Julia was a 'demonstration baby' in a course on infant development last week. She made a hit in her new sunglasses (which she will proudly wear for long periods of time). The testing was standard Piagetian object permanence: Julia performed solidly at high Stage 5, able to follow two visible displacements with no confusion at all, but balking at three. She gave some ambiguous evidence on a single invisible displacement (as she has for me), so it is hard to tell if she can make the inference that an object must be in the place where it last disappeared even if you did not witness the hiding beneath the screen.

3/3/84. I have made no entries for some time, largely because of my own schedule, but also because the changes in Julia are still so gradual and difficult to specify. I continue to be surprised by the 'now you see it, now you don't' nature of Julia's accomplishments, since the beginning. The accumulative view of vocabulary/gesture development that we have maintained in our studies seems more questionable. Are all those proto-words and gestural schemes still 'in there', underground, when they disappear for weeks on end? Or have they genuinely decayed in some way? I certainly hope Julia won't have the same attitude toward college....

She seems to be sneaking up on walking at a very cautious pace. Weeks after she took four steps, and we thought the moment was nigh, she is still at approximately the same level. She adores walking about the house with support, and actually seems to prefer bipedal approaches to goals via furniture to her more efficient crawling. But her record number of unsupported steps now stands at seven.

Symbolic development proceeds at the same gradual pace. If anything, I see even less evidence than I did a month ago. And yet we have sudden virtuoso moments that make me believe that a great deal is going on underground. Two weeks ago we had a language comprehension orgy in the evening before bed. We were in the large bedroom outside hers, with a variety of toys and familiar objects around. On command, she pointed to (1) the horsie, (2) a shoe, (3) a hat, (4) glasses, (5) a toy lion, (6) a sock. She also attempted to put the hat on the horsie when asked to do so, and similarly tried to put the sock on the lion on request. There was of course considerable contextual support for the multiword commands, but I was impressed nonetheless. In the next few days I obtained some similar evidence for comprehension of book, doggie, ciuccio, and bottle. In addition, when asked "Where's the horsie?" while in the living room, she turned and pointed in the direction of the large bedroom where the horse is kept. Other times, however, I set the items up in a circle, begin going through the roster of supposedly known objects, and evoke thoroughly random behavior. Is it 'there', or not? I asked her to alternately feed me raisins and cheerios from her tray last week, and performance did seem above chance. Comprehension of the new word "flower", together with a sniffing gesture, seems to work with a variety of real and depicted flowers—but again, the evidence is stochastic at best. It really is difficult to know how much of the unreliability in eliciting Julia's language and gestural schemes is due to the

precarious nature of the schemes themselves, or to Julia's own capricious temperament.

Julia has become so much more affectionate in this month since the end of breastfeeding, cuddling into our chests, hugging (humans and toy animals), patting. However, her affection is not restricted to us. She seems quite attached to her babysitters (first the substitute Jaylene, now Cindy once again), and also quite willing to climb into the arms of family friends and visitors who are her merest acquaintances. Of course, given the nature of her daily life, this is the healthiest possible solution. I do regret it from time to time, selfishly wishing that she had eyes only for me, and perhaps, for George. However, given a weekend day together at last, Julia does still seem (oh wonder!) to hold me dearest of all. I had feared that she would have a Cinderella reaction to Cindy's new baby, particularly now that the process of breastfeeding is a spectator sport. However, Cindy reports no problems, just an avid visual interest from time to time. Julia still seeks my breasts out sometimes in the early morning, playing in bed with us, but after a quick test she obviously concludes that the damned things don't work anymore. I don't detect any resentment, nor any really serious disappointment. The bottle is still a happy companion, and her renewed affair with the pacifier seems to be substitute enough for the rest. Although Julia can be very fussy when overly tired or marginally ill (which happens all too often), she now seems to have a happy, even disposition most of the time. She goes to bed regularly, without problems; in fact, if we are still out playing in the living room at 7:30, she will often throw her little head down on the floor and sigh until we carry her into bed. We could never have predicted this in those difficult early months. She has picked up a couple of proto-tantrum schemes: arching her back sharply when pulled away from some forbidden goal, screaming when told "don't pull". But we have worked hard at being firm, comforting her and/or trying to distract her as soon as possible, but not giving in. Last week she moved toward the back of the television table, in the direction of forbidden wires and a lamp, and turned to look at me with a wicked grin. She also shook her head several times, in a sensorimotor display of conscience. I came over to pull her away, and I think she was almost grateful. Let's hope that the pattern repeats itself in adolescence...

3/20/84. We are almost up to Julia's one-year birthday. I have made no entries for a couple of weeks (more because of my own schedule than Julia's), and it may be hard to keep track of all that has happened. First of all, she is now most definitively a walker, although the transition was so gradual that it reminded me of my own, shall we say, overly gradual passage into womanhood. Seven steps became ten, then crossing half a room, then a whole room; and now long journeys are occasionally executed on foot through the entire house. She will try to walk carrying enormous burdens, and extricates her foot from obstacles without looking. Perhaps all that caution has paid off. This 'walk don't run' approach is so similar to her approach to language that I am tempted to infer a common cause.

Julia's language comprehension continually comes out like the sunshine, and then goes back behind the clouds. A rough tally, giving all benefit of the doubt, would suggest that the following items are now understood: *bottle, keys, doggie, lion,*

*daddy, ciuccio, book* (including a differentiation between other books and "Mister Brown" by Dr. Seuss, which she can distinguish from the others; the patty cake book may have a similar status) *flower, tree, car, chair, diaper, shoe, sock, glasses, raisin, cheerio, nose, Cindy, baby, horsie, apple juice*, plus perhaps the phrases *Don't bite, Don't pull, no, feet first*. At the birthday point, I intend to do a more systematic test of all of these plus a few more, since I think this may well now be an underestimate.

Her language production, again requiring benefit of the doubt, is harder to characterize. *Hi/bye* seems to have disappeared for the moment, nor have I heard *shoe* in a while. A word-like sound *dis* is constantly used now while manipulating or pointing to things of interest. I and/or others have heard her make appropriate and fairly general use of *tree, horsie*, and something rather like *doggie*. While at the park with Barbara this past weekend, Julia pointed to a car and said something very like *car*. I took her to the zoo 10 days ago, and after I had pointed out and named the monkeys many times she began to repeat something like *Mong...* However, after she had done this a few times she pointed straight at the monkey cage and twice said *buh*. I corrected her a couple of times until I noticed that she had her finger extended pointing to a small bird sitting on the railing outside the monkey's cage!! This is why the Language Acquisition Device has to be impervious to a little bad data!! Her aim at linguistic targets is always imprecise, and monosyllabic, which makes it harder to assess what target she might have in mind. Clearly, however, she aims more often at nominals. Furthermore, I see little evidence of words restricted to a single referent and/or context; rather, once something appears, it seems to be applied to several perceptual variants of the target class (dogs, birds, monkeys, shoes, etc.)

I still see relatively little in the way of recognitory gestures and/or immediate and deferred gestural imitations. There are a few nice examples, however, of range of extension. For example, she now tries to feed her food or *ciuccio* regularly to adults, other children (including Cindy's infant, and toy animals including her big wooden horsie. Two days ago she picked up her big plastic cylindrical shape box and briefly "drank" out of it. Various telephones (which do indeed vary these days) receive the requisite gesture of placement at the ear. She will pick up tissues and "wipe" her own nose, and try to wipe other people's noses as well. Brushing is enthusiastically (and sometimes painfully) carried out on her head, other human heads, and the horsie's mane. Patting/stroking is extended to a wide variety of animate recipients or toy animals, as is hugging. For example, she can now frequently be found hugging her baby lion or some other stuffed animal in bed at night. Today at Cindy's, she curled up on the couch next to the infant Ben, hugged him, placed her head against his, and sighed. She seems to take Ben's welfare seriously, pressing toys and clothes against his body including (and particularly) diapers. Furthermore, even brand-new gestures are immediately extended to more than one recipient, such as a nonsense gesture of clapping a bowl-like plastic toy against the nose which Barbara modelled last weekend. Barbara also showed her how to stuff things in her pocket, which she spent the rest of the afternoon doing. The next day, dressed in another pair of over-

alls with no front pocket, she kept looking down and patting the front of her overalls in frustration and puzzlement.

Evidence both for language comprehension and (perhaps) representation was offered this weekend, when Julia had spent much of the morning playing with my keys, finally dumping them on a ledge behind the couch. That evening, George asked her “Where are the keys?” She began by looking all over the floor, but then finally (and with some suddenness, as if it had just come to her) climbed up to the couch and reached behind to retrieve the keys from the ledge. Similarly, asked “Where’s the horsie”, she will go off to find her horsie in the back room from a variety of locations in the house—but of course this has a firmer long-term memory basis than the instance with the keys behind the couch.

I showed her a photograph album last week, and she pointed to herself and to George and me with considerable excitement, as though she definitely saw some connection (although I suspect that the early baby pictures of herself were confused with her companion baby Ben, who is now at an equivalent age). That prompted us to the decision to make her a big photograph book of best-known objects and people, as an upcoming birthday present. That should give us some interesting insights very shortly.

I had to leave Julia for four whole days this last weekend, the first time we have ever been apart overnight. In fact, George spent such high-density time with her that I suspect it did her more good than harm. In any case, I returned Sunday night too late to wake her up, and she saw me for the first time in 96 hours when I came in to get her Monday morning. I was prepared for some anger and resentment, but it was milder than that. She stood at the bottom of her crib nearest the door, and when she saw me come in, looked quite surprised, almost embarrassed, and glanced down quickly biting onto the edge of the crib. I picked her up, and she strained away, but as if to cover the apparent rudeness she began pointing to an embroidered bear on her wall quite nearby (“I’m not really avoiding you, I just think that we ought to discuss this bear...”). I got her bottle, brought her into bed with us, and she lay there sucking on the bottle and not looking at me despite my efforts for a while. Within five minutes, however, still not looking, she reached out with her hand and began patting and exploring my face. The rest of the morning was all warmth and smiles and hugs. She forgives quickly.

## JULIANOTES 2

3/21/84. Of course, immediately after I printed out and copied this diary up through the last entry, a pile of new instances occurred. First, I picked Julia up at Cindy’s, and on the way to the car she pointed at our Honda, and said “cah”. The same word was uttered today in the school parking lot, as well as from my office window up five stories high overlooking the parking lot. She said “tree” (which sounds more like “teh”) on seeing our coral tree going into the house last night, and on seeing an entirely different couple of trees on campus today. I held her up to the mirror last night at home, and she said something very much like “baby” (which, according to Cindy, she refuses to say despite much prompting to baby Ben). Standing at the edge of the tub last night, she pointed to the water running from the tap and said something halfway between “ba”

and “pa”—which might be related either to “bath” or “splash-splash” or both. I have also noted an array of other monosyllables that seem quite deliberate, made while pointing and looking at me for acknowledgment, but alas remain uninterpretable for the moment.

We had some interesting comprehension examples last night as well. With very careful and deliberate searching she managed to retrieve from a crowded toy box the following requested items: shoe, glasses, telephone (which she immediately put to her ear). I asked for the car, indicating a rather schematic wooden toy car on the floor. She looked quite puzzled, and then reached around and pointed out the front door. I tried my command again, and she again insisted on the front door (i.e. toward the street where our car is parked). So “car” clearly refers only to large vehicles. She did, however, demonstrate her rolling-back-and-forth gesture with her toy bus. I doubt very much that gestures with toy cars and names for real cars are mapped onto each other in any way at this point.

The only body part name that I can elicit reliably, on various human and animal faces, is “nose”. However, Cindy believes that Julia knows other body parts as well, in particular “mouth” in the context of feeding. I gave Cindy a copy of the notes up to today, and should thus be able to get some more updated observations from her shortly.

3/22/84. A couple of new things, including further evidence for the range of extension of “car” in production (e.g. pointing out the window at Piret’s at the traffic outside). At dinner last night she asked for “juice” repeatedly by name, and said “dah” over and over when a dog barked outside (this varies between “dah” and “dah fee” as though “doggie” is her vague target. Although I haven’t kept good track of word/pointing combinations so far, I did note that the dog-outside was named while she pointed at the back door. She also said “nice” a couple of times while petting animals and people. I think she has made a stab at “lion” more than once in an appropriate context, but this word is particularly unclear phonologically. It seems as though she is suddenly trying to say so many things, with clear communicative intent, but her phonology really is so difficult to decode that I am hesitant to read too much in. I do have the clear impression, however, that very little of this is imitative. Furthermore, terms seem to ‘come out’ only after they have gone through considerable decontextualization entirely underground; hence first uses are typically correct, ranging across several different exemplars of a set. But then again, perhaps those are the only ones that I can really decode. One thing is certain: her ‘aims’ at a target are more often spontaneous than imitative, as if she has been giving it some prior thought.

3/26/84. The birthday weekend has come and gone. We gave Julia a Fisher-Price farm (with associated animals) and a Fisher-Price nursery set (with tiny playpen, changing table, cradle, stroller, highchair and rocking horse, plus a baby and several people). She has played with these fairly intensely since then, although it would be difficult to claim that her play is representational. With the play pen, she did try very hard to put her own foot inside (pushing it down with her hand). This playpen is so unlike a shoe, that I think she was genuinely trying to climb inside the three-inch-square space! She places the various people into appropriate holes, but that is fairly ambi-

guous in and of itself. I've modelled a number of things for her, however, which seem to fascinate her: sundry care-taking behaviors with the "baby", especially putting it in the highchair and feeding it real or imaginary raisins. Still no imitation of these. However, she also received a tea set for her birthday, and drank immediately from the small cups. I modelled stirring in a cup with a spoon and feeding various animals; she reproduced the stirring part quite nicely, but the feeding/eating was less clear. Another of her presents was a set of "bristle blocks", square and rectangular colored plastic shapes with very short thick bristles that permit the blocks to stick together easily. To my surprise, Julia picked up one and brushed her hair with it, the most abstract object recognition scheme I've seen to date.

The back-and-forth headshake gesture is still an interesting one, appearing when someone says "no" or when she is about to do something that she apparently knows to be forbidden. This new 'concept' of wickedness seems to go hand-in-hand with an increasingly wicked gleam in her own eye when she contemplates forbidden activities, accompanied by coy facial expressions and a 'scrunching' of the shoulders. The coyness is also rampant in the context of approaching new people: walking toward them, then turning tail and clinging to or hiding behind a parental leg, rubbing the eyes while looking downward with a big grin. Watching displays like this a couple of weeks ago, a graduate student of mine said "She really is beautiful, but there is too much devil in her eyes to make me wish that she were mine."

4/12/84. Another long hiatus in writing, once again my fault more than Julia's. We have been on two trips as a family: Stanford/San Francisco for the Child Language Forum, and New York City for the infancy conference. Alas, my memory for various incidents is fading, but I will do my best.

The first thing to point out is that the increase in vocabulary noted above has eased off; in fact, some of her fledgling words seem to have disappeared. A few others have consolidated. In particular the words BIRD, CAR, TREE, DOG, and SHOE are especially recognizable and have a great contextual range. There are many monosyllabic stabs at words, with pointing and eye contact and every other sign of communicative intent, but either this is a case of rampant homophony (e.g. the single sound "BUH" means twenty different things) or Julia is faking. Her father tried teaching her several food words one morning, and got relatively clear repetitions (many trials into the game) of CHEESE, GRAPES, CHEERIOS. CHEESE appeared later spontaneously (i.e. "CHEH") in a very different context (and with very different cheese). GRAPES (or rather, "Geh") was repeated with alacrity upon exposure to plastic grapes two weeks later, after I mentioned them only once. However, our newly arrived friend Virginia, staying about the house and listening for examples, concludes that Julia can only say SHOE. So there is very little in the way of productive language on display these days.

Nevertheless, there is much more evidence for language comprehension. First of all, if I ask her "Where is X?", "Get the X" or any other such question containing a likely target word, she becomes very intent on looking around the room as if she were trying very hard to solve a problem. For a few words (HORSIE, CAR, DADDY) she reliably looks in the right place

immediately even if the target is not in view. For others, she seems to initiate a generic search until the target is reached or forgotten. For still others, I must admit, the search is terminated by handing me an irrelevant substitute item. The important point is that the "game" of matching linguistic input to environmental targets is very well established.

Perhaps more interesting is the new evidence for comprehension of word combinations, albeit with great familiarity and contextual support. For example, yesterday she had just put a little Fisher-Price person into the play barn, and closed the door. The toy playpen sat right next to the barn. I asked her to "Put the little man in the playpen". She opened the door, took out the little man, and put it directly in the playpen without hesitation. Next I asked her to "Put the little man in the shoe", intending her to put it in a loose tennis shoe sitting nearby. She first looked at her foot in puzzlement and grabbed her own shoe (how indeed could two objects occupy the same space?). I repeated my request a few times, she looked around and finally hit upon the loose and unoccupied shoe, and placed the little man inside. Tonight I tried to repeat the incident with still less contextual support, handing her the tiny wooden FP baby across the room from the mess of toys where the playpen was located, saying "Put the baby in the playpen." She turned with the baby in hand and headed for the toys, but stopped in confusion. Later, with fewer distracting options in the way, I repeated the first success by asking her "Get the doggie" (which she did, retrieving the FP dog after a careful search) and then saying "Put the doggie in the playpen." So this new ability is still a bit resource limited, but it generalizes nonetheless.

PUT is not the only verb that elicits these combinatorial instances. Julia has also responded to FEED THE (X) to (MOMMY, DADDY, VIRGINIA, DOGGIE, HORSIE) by putting the pacifier, bottle or foodstuff in hand up to the requested mouth. And she will also respond to GIVE THE (X) TO (etc.) by pressing the target object against some/any part of the recipient animal or person. I've had more limited success with body parts. She has reliably switched nose owners when asked "WHERE'S (DADDY's, MOMMY's, GRANDMA's, LION's, DOGGIE's, HORSIE's) NOSE" but this ability seems restricted to noses. On other body parts (ear, hair, mouth, eye) we're lucky to get appropriate pointing on a single owner. This is, then, only the most tender beginnings of combinatorial comprehension.

Her symbolic play/gesture is showing a pattern quite similar to the pattern for words: few imitations, little spontaneous application, but very general and 'decontextualized' application of those schemes that are available. She has "brushed" with the most minimal of brushes, without modelling, including Virginia's small purple barrette (with a few schematic teeth) and a paintbrush-shaped brush for applying powdered rouge. In both cases, the would-be brush was applied without prejudice to herself, daddy, mommy and Virginia; furthermore, with a little verbal/gestural prompting (i.e. holding the object up), she also "brushed" the hairless FP animals. Similarly, she dragged out a babywipe and began to "blow/wipe" her own nose. I briefly modelled wiping the nose of the FP person, which she repeated and then extended to a couple of other doll figures. She will also "wipe" real or imaginary substances off the floor with napkins and cloths. The gesture of running a car back and forth is now

freely applied to the FP tractor, stroller and anything else with wheels. Furthermore, tonight she put two FP persons inside the plain white rectangular FP trough (for feeding animals in the farm set) and ran it back and forth on the floor in the same way. Finally, virtually anything resembling a telephone, from one hotel room and house to another in the last two trips, receives the requisite receiver-to-ear gesture.

This morning I dragged out her plastic tea set, which she hadn't seen in about 10 days. She stirred with the spoon in the cup, "ate" from the tiny spoon, without modelling. George modelled pouring from the pitcher, and wiping the mouth with a napkin, and she reproduced both across the next five minutes. In addition, she tried removing the lid from the coffeepot and setting it carefully on top of a cup. The whole activity soon broke into manipulation of the parts: putting different things in the cups, stirring across vessels, nesting. I'm curious to see how much and how long the TEA SCENE goes on in subsequent encounters with the same toys, without modelling. (However, George may have just destroyed the symbolic nature of the whole process by bringing her tea set to the highchair, putting real juice in the cups and real food on the plates!)

I have long maintained that American children rarely use referential gestures in communication, a point which Virginia disputes. Not surprisingly, given this amicable disagreement, Virginia noted a phenomenon that I had missed entirely: when she recognizes a 'drinkable' (bottle, cup, glass) and/or when she wants something to drink, even if it is not in sight, Julia emits a kind of sucking/sipping sound with pursed lips.

Pattycake appears only sporadically. However, for several days there seemed to be an odd shift in the pattycake gesture, a vertical movement of brushing the hands against each other which looks like the adult "I'm through with this" gesture. This may come from Julia's mysterious social life during the day at Cindy's, about which we know so little.

During the New York trip, Julia spent two nights with her grandparents while George and I were in the city at the conference. This was, then, the first time she was separated from both of us at once overnight, and in a relatively unfamiliar house. We called every few hours, worrying that Julia would be massively depressed. Her grandparents indicated, instead, that she was gleefully playing and ordering her three slaves (George's brother Jim included) about the house, giving/bringing them every loose object light enough to carry, eating well and sleeping well and generally feeling fine. The only sign of concern was that Julia became increasingly unwilling to let Grandma out of her sight, so that by Sunday afternoon (after her father had left on Friday morning) no one but Grandma was allowed to pick her up. This suggests, of course, that she was starting to worry... We came in the door Sunday evening and she looked at us from Grandma's arms with what can only be described as an expression of shock. Across the next five minutes, she leapt from my arms to George's with ever-increasing agitation, noise, excitement, until she was finally literally running from one to the other crying "DAAA! DAAAA!" to both of us. (In fact, both comprehension and production examples across the next two days suggested that DAAA now means "parent", both mother and father, although her father is still the prototypic member of the DAAA category.) The frenzied joy was repeated when we

arrived Monday afternoon at home. She was clearly excited to see her house when we pulled up, and when we got in she again cried out in joy and trundled from room to room pointing and greeting familiar objects with laughter and shouts.

All of this sounds likely nothing but happy reunion behavior at every step. But this is not entirely correct.

There are several signs that Julia was a bit upset by the separation. For example, after the first hour of joy on our Sunday night return, she became uncharacteristically bad-tempered, throwing dramatic tantrums at the least provocation (although they lasted no more than 60 seconds despite their apparent desperation). This included a series in which she pulled George's hair, was told to stop, cried, quite deliberately ran over and pulled Grandma's hair, was told to stop, cried, then reached up in frustration to pull her own hair and then REALLY cried! The next day the tantrums had ceased, but any sudden or unexpected change (e.g. getting out of the car at the airport, Virginia getting up and leaving in the airplane) triggered crying and the need for comfort. Although she is always affectionate, she seemed to want much more cuddling than usual, and today (Thursday) is the first day that she has played as independently as usual among her toys as we move about the house. Given all that we put her through in this series of trips, she can hardly be blamed for worrying.

4/16/84. For the last several days, we have had a series of meetings on language and gesture, with Virginia Volterra and with Elissa Newport and Ted Supalla. This has, then, made me more sensitive to issues of gesture and word/gesture combination in Julia's behavior. In particular, Elissa and Ted are visiting with their 13-month-old daughter Susanna, which has led to some interesting comparisons of the language/gesture relationship in Susanna versus Julia. In this regard, a couple of anecdotes across the weekend are particularly interesting.

First, I had tried explicitly about a month ago to teach Julia the sniffing gesture for flowers. She responded somewhat sporadically across the next few days, and then seemed to drop the gesture entirely. Over the weekend the flower-sniffing gesture suddenly reappeared and generalized to virtually everything in the garden that Julia could pick up and hold to her nose. Also, I had modelled sniffing pictures of flowers in books a few times, a behavior which Julia has now begun to produce spontaneously with one particular book (i.e. she will go across the room, pick the book up, turn to the flower page and sniff). Finally, she emitted the sniffing sound/gesture spontaneously from a distance today, while we passed a flowering bush on the way to the babysitter's. The use of the sniff gesture to flower pictures does at least have a basis in my own modelling. However, this morning I was lying next to her in bed (paying relatively little attention) when I heard her sniff to the open flower page in the usual book. I opened my eyes to watch, and caught her moving on in the book to a picture of a telephone, whereupon she immediately placed her closed fist up against her ear in an empty-handed telephoning gesture. I repeated the behavior myself a couple of times, and she responded in kind again at least twice. (This recognitory phone gesture was repeated in the next few days to the same phone picture, and again on 4/26 to a different picture, in a different book, of a teddy bear making a telephone call.)

We also obtained some new observations on comprehension of combinations last night. She had come in from her bath clutching her hairbrush, “riding” (with Daddy’s help) a large toy lion. Upon request, she brushed her own hair, Daddy’s hair, Virginia’s hair. Later she responded to “Brush the lion’s hair” by picking the brush up again and brushing the top of the lion’s head. I then asked her to “brush the lion’s nose”; she responded by stroking the brush against the lion’s nose (albeit with some imprecision). Virginia then picked up her own sweater and asked Julia to “Dress the lion”. I paraphrased the request with “Put the sweater on the lion”. Julia first held the sweater up against the lion’s head, and then placed it clumsily on top of the lion’s head—perhaps responding to both commands? Or to common sense, i.e. known combinations between animate beings and sweaters? I’ve tried with words and with modelling to get her to put diapers on various animals, but so far this scheme doesn’t seem to interest her very much. I also asked her yesterday, as she came into the room carrying a spoon (and putting it to my face) to “Feed the horsie with the spoon.” She did precisely that.

We went to the zoo yesterday, and noted a great many examples of attempted naming (particularly birds). It seems fair to conclude at this point that the sound complex “bah/beh/buh” is issued fairly unsystematically (i.e. I can’t find a principle determining which form is used when), to refer to the following objects: *bird, ball, balloon, baby, bottle, bear*. The sound “Dah” is used with dogs (but was not offered to describe any of the dog or catlike animals at the zoo). In addition, “dah” definitely refers to her father, and is also used occasionally while approaching or pointing to me, or when protesting my departure. “Meh/mee” seems to be a complaint/request noise, as it has for some time, although it does seem to occur with slightly greater frequency when approaching me. So who am I to Julia? I’m not sure yet.

“Teh” is still reliably restricted to trees, and a range of variants around “shoe” are used for virtually any shoe of any size or type (although a few times she has seemed to produce a distinct “sah” sound for socks). “Cheh/chee” is either cheese or cheerios or both. Interesting, there seem to be no sounds corresponding to flower, brush or telephone; for which she has such well-established gestures—even though she is inundated with modelling of words for both referents. Is it possible that the appearance of the difficult s/f sounds in these words causes her to avoid the vocal forms?

The hi/bye waving gesture has resurfaced, used as widely as it was over a month ago, but I am less clear whether she is producing the corresponding sounds. The sound “nai” (nice?) has been produced while patting, stroking and also without the corresponding gesture, but I feel fairly unsure about the distribution of this still infrequent complex.

Today Julia was left with two new teenage babysitters to play with Susanna, in the downstairs laboratory, while we met upstairs. In our morning confusion, we had packed canned formula but neglected to pack a bottle, nor did we put any other kind of food in her diaper bag. We are told that Julia cried on and off from eleven to noon, pointing repeatedly at her diaper bag. When the girls finally gave her a couple of crackers, she consumed them so voraciously that it is obvious she was

hungry. She was, then, trying to convince them to take food or formula from the diaper bag where it is usually kept on outings.

Perhaps the most important yet vague observation that I have concerning the last week is one that I have heard repeatedly from mothers in our own research: “My child suddenly seems to understand almost everything.” I think that this impression stems not so much from an increase in the child’s actual receptive vocabulary (although this is undoubtedly involved), so much as a new level of understanding of the comprehension game. There have been several cases in the last few days in which Virginia or I have tried to elicit comprehension of combinations with new verbs, or in new contexts. Julia often gets it ‘wrong’, but is clearly following a deliberate problem-solving strategy in response to our efforts: looking around, picking up nearby objects and giving them to us, or doing something that is characteristically done with those objects (especially if that known object was named in the command). If I say to her “Let’s go get/find (person’s name)” or “Let’s go have dinner”, or whatever, she gets up and starts to follow me with a very intent and puzzled look. Sometimes she seems to “click”, as though she thinks she has figured out what I intend for us to do, and she takes off in the direction of the kitchen, or the bathroom, or a room where the target person or thing is likely to be found. It is, then, this new level of cooperation in communication that gives the strongest impression of understanding—even if her guesses are wrong as often as they are right!

4/18/84. I have several new anecdotes from the last couple of days. First, yesterday Julia was playing around the dishwasher as I tried to fill it and keep her from dangerous objects at the same time. I finally banished her to the living room, with her father’s help. Her solution to my solution was the following: she picked up two of her toy teacups in the living room, carried them quite deliberately into the kitchen and put them in the dishwasher.

There may also be another repercussion of Julia’s encounter with Susanna. Susanna had been frequently observed (by us as well as her parents) producing what appears to be a nonsense gesture of dabbing her right index finger into her left palm. If there is any systematicity to this gesture at all, it corresponds roughly to Julia’s “dis”, an all-purpose comment on something of interest. Within a few days of her two long mornings of play with Susanna, I observed Julia herself making this same gesture. It disappeared shortly, never to be seen again. It is difficult to explain this odd gesture as anything other than a deferred imitation.

This morning, after drinking her bottle in bed with us, Julia wandered into her bedroom, opened her dresser drawer, and pulled out a nightgown. She got it partially over her head, so that her face was sticking out nun-like while the rest still covered the top of her head. With this accomplished, she proudly walked in to show us and simultaneously said “ayse”—which is, I think, a new usage of the word “nice”. Around the same time, she was walking around with a clenched fist held in front of her as if she were carrying a non-existent object. Her father said “What have you got there?” and she walked over and “put” the non-existent object into his hand. I discussed this example with Tony, who raised the possibility that she really had originally picked up a solid something, perhaps a crumb or bit or lint, which was lost

in the transfer process. Unless/until I see other examples, that possibility is certainly viable.

4/19/84. Virginia went back to Rome today, and the house is settling back down to a more mundane routine. Julia, who had a slight fever last night, stayed home a little longer than usual to play with us this morning; so we could be sure whether she should go out or not. She was cheerful albeit a bit subdued, and exceptionally affectionate, as we sat around in the living room playing more comprehension games. This provided still more evidence for the ‘problem-solving’ nature of her current comprehension. I asked her to “get the spoon”, which she did after a careful search in the surrounding forest of toys. Then, without pointing to Daddy’s huge and rather obvious shoe nearby, I said “Put the spoon in the shoe”—which she did with little hesitation. Then I said “Put the spoon in the bottle.” Her baby bottle was right before her eyes—but then, of course, it is certainly not shaped like a likely recipient for spoons, having no obvious large holes for spoon placement. She hesitated quite a while, looking confused, and then picked up the bottle and put it in the shoe. I also asked her to “Give the block to Daddy”, fully aware that the word “block” is probably not in her receptive vocabulary. Even though the block was the most ideally placed object at the time, right before her eyes, she stared around with an intent expression and finally reached over and pointed at the pile of books in the toy box. She apparently went to work on the sound pattern in the word “block” to extract “book” as the most likely candidate.

4/21/84. Julia finally has a two-syllable word: BABA, applied to baby bottles. The same day this was confirmed independently by us and by Cindy, she also attempted her first imitation and subsequent naming of “apple”—pronounced “KAPPA”. I’m beginning to be convinced that the ever-increasing homophony in Julia’s phonological system is no accident, i.e. that she is trying at some level to impose a principle of economy, using the fewest possible sounds for the largest possible set of referents. The “Bah/beh/buh” example was mentioned earlier (at that time, for bird, bottle, bear, baby, etc.). Now that the reduplicative version has emerged and quickly differentiated, I’m even more convinced that some kind of conservative strategy is involved. “Dah” is now being used for daddy (and, sometimes me), dog, and just recently for “down”. The words for “shoes”, “juice” and “cheese” are sounding more alike all the time, although she seems perfectly aware of the distinction as judged from appropriateness of use.

On the other hand, I’m becoming more aware of play with multisyllabic forms under single and varied intonation contours. One that I failed to note emerged temporarily a couple of weeks ago: a string of consonant–vowel combinations using C, D, G, B plus variation between “ah” and “oi” vowels, all uttered in the same high tone (e.g. “OIGADOIGADOIGABOI...”), ending with a long glide down on an open “ah” vowel. This occurred consistently for several days, usually while she sat in the back of the car, and sounded for all the world like ‘conversational scribbling’. Then it disappeared. Nothing else quite so consistent has followed, but there is definitely more long and varied babbling now.

4/22/84. EASTER DAY. Since the block episode reported the other day, Julia seems to have added blocks to the set of

referents referred to with the ubiquitous “ba” monosyllable. However, George swears that the various BAs are indeed starting to differentiate by referent class; in particular, birds are marked with something more like a “buh”. He may be right, but if so the data are probabilistic at best.

A new event is the tendency for her to try and name things with something very like a questioning intonation, looking straight at me as if for confirmation. A particularly interesting exchange in this regard occurred in the car yesterday, waiting for George to come out of the post office. Trying to forestall an impatient tantrum, I kept pointing out pigeons and other birds flying nearby from roofs to wires to ground. At first she kept providing the usual label “buh”. I kept repeating with very clear and even caricatured enunciation “BIRD”, stressing the last phoneme in particular. She started to stare at me, and back at the birds, and said “dah” several times. Fearful of having caused backsliding, I repeated “bird” stressing the first letter. She looked at me intently and pressed her lips together twice in a sustained start of a “b”, and alternated back and forth between “ba” and “da” for a minute or two. I continued to provide a clearly enunciated “BIRD”, and at one point she seemed to pick up on neither the first nor the final consonant, but on the medial sound pattern, saying “r/wa” several times. I take this as further evidence of a new and explicit interest in phonological analysis, at a level as close to consciousness as anything else that Julia does.

4/25/84. The BAPPA term that came in a few days ago is now used reliably for naming apples, requesting apples before she even sees them when the refrigerator is opened, and for naming/requesting large round and presumably edible objects (including oranges and potatoes, i.e. the famous “bappa-de-terre” or “ardenbappa”). It’s interesting that BAPPA refers only to edible round things, while BA (ball?) is used reliably for balls and balloons. George thinks (though he is not sure) that she also applied BAPPA to her small meatballs at dinner last night.

Julia is also more likely now to name Daddy with the bisyllabic DADA, although DA is still common. So the principle of duplication to achieve meaning contrasts seems to be proliferating.

The hand-to-ear telephone gesture and the flower-sniffing gesture have both recurred several times, at a distance from the object and/or in response to pictures, so these really seem fairly well established as ‘names’ in the gestural modality. However, I have not noticed any new additions to her gestural repertoire—except perhaps if we want to count a new and quite deliberate scheme of ‘adult-like sitting’. She likes to climb into/onto chairs and sit at the edge with her legs dangling over, kicking them back and forth, and laughing as though this were a very clever thing to do. In fact, she will now quite deliberately ‘sit’ on an array of flat surfaces raised from the ground, including her play pegboard workbench and the large flat pillow in our living room. This activity seems quite distinct from ‘sitting-itself’ or plain old sitting, in part because she looks so unmistakably smug and pleased upon doing it.

George had two observations last night. First, around 7:15 (while I was gone) he had yet to make a move toward her evening bath, contemplating skipping it altogether and putting her to bed at 7:30 as usual; quite on her own, without provocation,

Julia got up and stood between the living room and bathroom, looking and George and pointing repeatedly toward the bathroom saying “dis” and “bah”. When he finally got up and said “Okay, do you want your bath?” she laughed and ran into the bathroom. The other observation occurred during play. The two of them had been playing tea party, stirring with spoons in cups back and forth, feeding each other with spoon and cup, etc. At one point, Julia picked up her baby bottle and began quite intently and systematically stirring the spoon around the top of the nipple. There seem to me to be only two explanations for this behavior. Either she had generalized the stirring gesture from cup to bottle via some semantic principle of liquid/drinking, or she was responding to my suggestion four days earlier to “Put the spoon in the bottle” (see above).

4/28/84. BABA is proliferating: it is now used for BALLOON, BABY, SHEEP (with a slightly different vowel, a shorter “a” as in “how does the sheep go?”), as well as for BOTTLE, and perhaps, for BELLYBUTTON (although on that one she alternates between BABA and BEH). It looks as though she has now split the ubiquitous BA into a monosyllabic form and a multisyllabic form, corresponding to the metric properties of the target word. Meanwhile, I still think her parsimony theory is at work on other aspects of the lexicon. The convergence of SHOES, CHEESE, JUICE and maybe CHEERIOS into a single sound something like CHISS or SHISS has now been extended to shirts, sweaters and nightgowns—probably with SHIRT as the target. On the other hand, George seems to hear more instances of differentiation. For example, it seemed to me that the word HORSIE was also at risk for falling into the cheese complex (pronounced SHEE for a while); but George heard two very clear renditions of HORSH while I was gone to New Orleans overnight. Also, some of her stabs at JUICE are getting much clearer now. (She seems to get confused sometimes and refer to liquids in cups as BABA, perhaps indicating some kind of recognition that good liquids belong in the same category regardless of receptacle). When I came into her bedroom to get her this morning, she kept pointing toward the door and saying BABA over and over again, then said BABA and picked up the tiny bottle of Tylenol drops (with a squeeze-dropper top) saying BABA and trying to suck from the top. Her repeated requests didn't stop until we left the bedroom and I handed her the long-sought bottle.

While I was gone, George reports that Julia stepped into his giant slippers and actually managed to walk across the room in them. She also had another long shoe episode that evening, disappearing into our big closet and coming out with one Daddy Shoe after another, putting them at his feet one at a time. When that compilation was complete, she went off into her own room to the shelf where her own shoes are kept and starting bringing those out. Could we say that this is categorization of a sort, persistent albeit uncomplicated?

The bye wave now has an Italian ciao-like hi gesture as its reciprocal. This is used in waving to people, in response to the word hi, and in a fairly unspecified set of conditions of joy, greeting, and putting FP people to bed or into the barn. Also, there is now a reciprocal head nod for the already established headshake. Whereas the shake is a reliable cue that Julia is contemplating naughtiness (of various kinds), the head nod seems

to accompany earnest plans (like trying to fit blocks into the top of her shape box) that are in turn marked by clapping if she is successful. A good example of the naughtiness gesture came today, when Julia picked up an old orange peel and repeatedly put it to her wide open mouth, looked at her father, shook her head, laughed, and went through the ritual again. She will now also imitate my “BLAH!” and disgust gesture with mouth and tongue when tasting something she doesn't like, or an old piece of discarded food that I don't want her to eat.

Yesterday she picked up a picture of herself as an infant, inside of a tiny flowered china frame. She said “BABA” (more like BEHBEH) to the picture, and then applied her sniffing gesture to the tiny painted flowers on the rim.

4/30/84. Julia now has the sound CACACA for roosters and chickens, presumably her version of cockadoodledo. CAH is still the sound for cars, and CAH and CAHCAH are used for cookies and crackers in an unsystematic way. But the rooster/chicken sound seems almost invariably to have three syllables—her first!

Tonight she became preoccupied with my keys—an old favorite, but at a new level this time. First she approached me holding one key out from the ring much as I usually approach a door. I took her cue, and started a game of “locking” and “unlocking” the door of her toy barn. We also went outside to the porch and slowly and carefully inserted the house key in the lock and turned it before going back in. This set off a lengthy bout of locking and unlocking by Julia on her toy barn, putting things in before locking up, getting them back out, etc. She never did say the word KEY during all this, although I think I have heard her say it (something like the plural KEESH) on several other occasions.

There was also a nice extension of tea party tonight: George had filled and closed his thermos, ready to set off for a late evening at the office. The thermos is a very new object in her environment, but she seemed to recognize the handle on the side and understand something about its function. After first treating it more like a bottle (sucking at the top) she then held it by the handle and seemed, despite its considerable weight, to try and pour. I put out a round block as a cup and asked her to “pour me some coffee.” She had a difficult time, sort of pushing the thermos against my hand, so I modelled pouring into the block and drinking from it. She also “drank” from the round block with gusto and sound effects and did a more creditable job of pouring herself. Then, she brought the thermos over to the doll on the floor and “poured” more or less into its mouth. I switched the game soon thereafter, and modelled brushing my hair with the same round block. She stared at me, and I did it again, saying the word “brush”. She then immediately picked up another cylindrical block and brushed her own hair with it. I then tried to get her to hug the block, but she lost interest.

Last night Julia fell over on the bed against the corner of her toy barn, and cried hard for several minutes while I held her. I went through the antics of smacking the corner of the barn and saying “bad!”. This seemed to interest her, although she did not follow my aggressive lead. Instead, a few moments later she very carefully placed her forehead against that same corner, twice, very softly, as if she were trying to reenact the accident.

Julia's comprehension of body part names is increasing. She will respond with considerable systematicity, on her own body or someone else's (albeit not always the body requested) to NOSE, EYE, EAR, MOUTH, BELLYBUTTON, and HAIR. She also quite definitely says EYE now while touching my eyes or her father's, or the eyes of some toy animal—but not, interestingly, her own eyes (which, of course, she cannot see....). I'm not sure yet whether she says NOSE, but thought I had heard it a couple of times. So far as I can tell, she doesn't say either EAR, HAIR or MOUTH yet. Also, the word for eye usually sounds plural as in "EYSH"—as though, via the kind of phonological economy she has been practicing lately, this one grows out of the pre-existing term AYSE for NICE.

This morning I heard Julia saying BABA to herself in bed upon waking up. This is the first time I've been able to recognize any of her actual words in crib speech. I don't think this was mere babbling, given its clear and deliberate nature—and the fact that bottles are always the first thing on her mind and the first thing mentioned to me at that hour of the morning.

5/2/84. Julia now understands the word "toes", immediately generalized in comprehension to all human and doll toes. I seem to have heard her try to say it as well, but need further evidence to be sure. She also responded yesterday to "Where's the dolly's bellybutton?" by pulling up the doll's dress in search of the minuscule would-be umbilical. Usually when she tries to say BELLYBUTTON her version is either the monosyllable BEH or a bisyllabic BAHBEH. Yesterday, however, after I kept repeating "bellybutton" very clearly, she looked straight at me and said CACACA. Since this word (for rooster) is her only current trisyllabic word, it is interesting to consider whether she offered it in an effort to match the lengthy four-syllable model with the longest word in her repertoire.

This morning I asked her to PUT THE CIUCCIO ON THE TV. She found the command quite confusing, looking at the TV and walking over to it but not quite knowing what to do next. George and I kept repeating the command, and she eventually just held the ciuccio up against the TV screen.

Pouring, feeding, drinking, holding cups and pitchers up to dolls' mouths, are favorite and frequent activities right now, requiring no modelling or verbal suggestion. She also initiates the game of naming body parts quite often, particularly by sticking her finger in my eye and saying "EYE", pulling up my blouse and trying to find the bellybutton (no easy matter these days. I tried to get her to say MOUTH yesterday, and she studied my lips very carefully while pressing her own lips together. I haven't noted spontaneous production yet of this or any other word beginning with M other than the general lament MAMAMA (which has an interesting and seemingly more playful 'fake unhappy' version something like MINAMINAMINAMINAMIN).

There is something rather like a sign combination now, in which Julia waves, then points, then waves at an interesting person or object on the horizon. Presumably, by Virginia's criteria, this is a combination of deictic gestures. It is, however, quite smoothly executed with no hesitation between gestures.

5/3/84. Julia's ability to segment words in comprehension seems to have hit some kind of new level now, insofar as she

can pull familiar words out of a stream without special focus or intonation. Case in point: tonight I gave her some boned chicken to eat and asked something like "Did you eat any of the chicken this time?" Although she didn't appear to be paying any attention to me, she began to say CACACA (which apparently is a response to both rooster and chicken—and perhaps duck, if so indicating a conflation of cockadoodledoo and quaquaquara around a common class of "big funny and non-prototypic birds"). Similarly, if she hears me say "bottle" or "juice" in any context, including conversation to another adult, it seems to set her off. (Along the same lines, but visual rather than auditory, she saw an extremely small picture of a bottle being drunk by an infant in a new picture book this evening. First she tried to pluck the bottle off the page. Later on, returning to the same page, she got up demanding BABA and walked toward the kitchen pointing.) In another pair of examples, I said sentences containing the word "no", to which Julia responded (inappropriately, given the context in which the sound "no" was embedded) by shaking her head back and forth. In yet another instance, George said "I'll bet she would have liked the ice cream." Julia apparently tuned into the word "ice", looked up and said "eyes" (a big favorite for a couple of days now).

We were on a short walk outside this evening, watching cars and trucks go up the street. She said "car" (CAH) spontaneously several times. When a large and impressive truck passed I repeated "trucks" several times, and she seemed (for once) to try and imitate with something like "tuh", and another effort something like "uck" (note that the sound "truck" presents something of a challenge to her current simplified phonological system, so this is a particularly novel effort on her part). I'm anxious to see if this word spreads as quickly as others seem to once they are acquired. If principles of 'phonological assimilation and avoidance' are still at work here, "struck" probably won't take for a while.

5/5/84. This morning Julia was sitting in my lap watching her father use the phone. She herself had been playing with the phone a while earlier, while I tried to make a call. Several times she put her hand to her ear in what seems to be a regular gestural name for phone now. Then she turned to the dresser next to the bed, pointed at my tiny pocket calculator, and made the phone gesture again. This display was then repeated. I was momentarily stumped, saying "What do you want?" Then I realized that she was probably overgeneralizing her phone gesture in response to the push buttons on the calculator. I am so used to thinking of phones in rotary terms, despite the fact that we don't even have one in the house, that the similarity between the calculator and our push-button phone hadn't even occurred to me.

Today Julia seemed to be 'branching out' a bit in her conservative phonological system, trying at last to say some two-syllable words with contrasting consonant-vowel combinations. In a long encounter with the dog next door, while we stood chatting with the neighbors, she tried saying "doggie" about eleven different ways; however, several of them sounded like "gahgee" or "dahgee". On the other hand, her sound "cacaca" has split off into another sound, "cococo", and as far as I can tell, she is trying to use both for almost everything—including barking dogs and sounds of birds in the distance, and a wide array of

things that I can't decode at all. So her urge to economize the sound system is still at work.

She has also learned to affect a new sense of dialogue by judicious use of head nods and headshakes in answer to questions. Sometimes it really seems appropriate, as if she has processed my entire sentence. For example, last night I said "do you want to have your bottle now?" and she nodded fiercely and ran for the kitchen. Other times, however, her nods and shakes have nothing at all to do with the message (in fact I wasn't even asking a question) and make it look like she was just guessing. It does, however, make things feel very different for me, as if I finally have an interlocutor here.

5/8/84. Julia's abilities to "overhear" her best-established words have gotten so good that I've now taken to spelling the words "bottle", "juice" and "apple" if I don't want to set off a frantic run for the kitchen.

On the production side, of course contrary to my predictions, Julia is doing pretty well now with the word "truck" (pronounced something like "uck")—although this is the first consonant-final entry in her system. George thinks that this comes from a little boy that Cindy has been babysitting for a few hours a day, a child whose sole purpose in life seems to be monitoring the environment for trucks and commenting on their existence. Meanwhile, she is experimenting madly with words for doggy: from the original "dah", to the occasional "cococo" (trying out the boundaries of the rooster category?) to the more recent "gagaga" and "gahgee". She's also tried to say "cat" a number of times with prompting, but her first try upon seeing a live cat is usually "gahgee". After our Sunday trip to the zoo, she seems to be trying to say "elephant" with a vague aim at the fricative (e.g. "ahfa"). Similarly, while hugging baby Ben this morning (whom she reliably calls "beh" or "baba") she gave a very clear "huh" sound which Cindy interpreted as "hug". So new phonemes are trying to come in.

Julia's buddy Walt at Cindy's house is introducing aggression into our lives, with regular efforts to bite Julia. She has not, thank God, responded in kind yet. However, George really thinks she eggs him on by offering toys and pulling them away before he takes them, etc. The literature would suggest that boys are only OVERTLY more aggressive than girls; girls are in fact sneakier. I hate to say it, but it may be true. Now, when she's frustrated, Julia has a bag of unpleasant little tricks for us too. Last night I picked her up to bring her in against her will, holding her against me facing forward, and she reached behind and yanked out my earring with uncanny aim, and put it proudly in her mouth. I took it back and she then yanked the other one out. Before I finally got her in the house, she managed to reach up (again not able to see me because of her position) and get my dark glasses and throw them to the ground. I guess she told me!! One could muse about the kind of body representation she must have to accomplish this act of aggression with such skill (i.e. virtually no need to adjust her well-planned aim...). But I'm not sure this is the message to take home....

### JULIANOTES 3

5/13/84. Julia is now 13.5 months old; the upper end for our last longitudinal studies of one-year-olds at Colorado. I therefore administered our old interview wordlist to myself this week, and got the following count: 34 productive words counting items sustained by 'weak' evidence; 27 of these are common nouns; 18 are solidly established and flexible in their range of use. Actually, a few more seem to have popped up since that count. However, perhaps the most striking 'new' insight I have from keeping track of these things—at least in Julia—is that very few of these words are really 'on-line' in any given 1–2-week period. Nothing seems to leave her comprehension repertoire, but virtually everything seems to drop out after a while in production.

Cindy has heard J say "water" fairly clearly, more than once, although I have no corresponding evidence. George has heard it too. This must be context dependent: J loves the little water fountain (for bottled water) at Cindy's house, which accounts for her frequent naming there; with her father, she loves to go out and water the lawn. Me? I can usually be counted on to provide "juice" and "bottle", so why bother with water? She now says "apple juice" with remarkable clarity, but seems a bit confused about how this differs from juice or even liquids in general. In fact, sometimes she just likes to stand there and say it as though she realizes this is a phonological high point in her development and just wants to show off.

Although she is still not an avid imitator, there are far more examples than before of J trying to repeat something new or old after me—with great concentration, and usually with a variety of permutations of the sounds I provide (as though she is studying the parts). A good example yesterday was "allgone", which I said in a sing-song voice and J repeated ("ahgah") complete with intonation. More practice with this sound has followed since then.

Her gestural repertoire is increasing. Among the life activities that have entered into her play are "pretend sleeping" (to any pillow, folded blanket, or square of cloth), "diapering" (consisting so far only of carefully opening and smoothing the diaper out, placing it in position—no one has benefited from J's diaper activity so far), "driving" (with the little steering wheel that George attached to the back of the seat in front of her), and the full set of events associated with watering the lawn. This watering scheme includes "pretend watering" with the telephone cord on one clear occasion. Hugging/patting/kissing have proliferated to human and non-human, animate and toy animate beings of all kinds (e.g. the Roman statue in the back yard). In a store last week, George let her play with a toy shopping cart—which she pushed down the aisle, taking objects off shelves and placing them in the cart. We've tried to introduce her to her toothbrush, but after one brief effort to apply it to her mouth, she insisted that a "brush is a brush" and applies it exclusively to her hair. (5/20/84—she has now put her toothbrush into her mouth spontaneously on several occasions, including one instance in which she repeatedly dipped it into the running water from the faucet and placed it in her mouth to suck the water off). Today when George and I were trying to read the Sunday paper, she went out to the living room and brought back one of her own

books, climbing up on the bed and sitting there “reading” with us.

In general, her interest and participation in book reading is increasing again. Now, when I ask her “Where’s the X?”, she points to something (even if it is often the wrong thing) fairly reliably—so, at least, she understands the point of that game. Correct points have included not only shoes, hats, lions, elephants, dogs and babies, but also the window and the lamp in her Richard Scarry book. The last two were surprises for me since I didn’t know they were in her repertoire. Also, when I name one of her animals or best-known objects in a book, she will sometimes point to it and repeat the name.

5/20/84. There have been three examples of gestural naming to pictures in books, all of them involving the unseeable region around Julia’s head: telephone (hand to ear), brush (closed or partially closed hand moving across the top of the head) and hat (open palm patting the top of her head). The hat gesture is now sometimes accompanied by the word “hat”. I have also seen her give both the hat word and the hat gesture to brand-new hats never before encountered. So this is a very clear first example of a gesture/word equivalent other than general deictics like pointing and “dis”. In that regard, it is interesting that the game “hat”, at seven months of age, was her very first conventional routine, long before bye-bye or patty cake ever appeared.

Her open-and-shut bye-bye gesture has taken on a whole new range of uses: all-purpose interest and excitement, greeting (sometimes indistinguishable from interest/excitement except that she may also say “hi”), and requests. The gesture is, also, often executed in a sequence with pointing. Because she does often say “hi” and perform this gesture at the same time, this constitutes another word/gesture equivalent (although it is deictic rather than referential by Virginia’s criteria).

Julia seems genuinely thrilled that language works. Today when we were sitting cuddling in the living room after her nap, she suddenly got up and looked me in the eye and said “baba”. I asked “Do you want your bottle?” and got up to go to the kitchen and she started to laugh uproariously and clap. I can’t exactly explain why, but this seemed like more than the usual pleasure over the coming bottle (which, in fact, is more often a frustrated and insistent whine as she follows me to the kitchen).

The “ahguh” rendition of “allgone” has generalized very quickly. She now says it spontaneously whenever a bottle has been emptied (sometimes holding it upside down and shaking it at the same time), and similarly when a cup is empty at mealtimes. Today she held a toy cup (which had had no liquid in it) upside down and said “ahgoo”. More than once, she has made a funny empty-handed shaking gesture that looks a little like holding a vesicle upside down and shaking it—while saying “ahguh” to a cup or bottle that is out of reach. If I’m correct about this gesture, then we have evidence for another word/gesture equivalent.

Julia “chatters” all the time now, but usually in a reliable phonetic pattern, something like “abiddabah” or “abadaba”. I wonder whether this is not derived somehow from her proud “apple juice” performance last week; this performance had gotten further and further removed from the context of real apple juice, turning into a kind of showing off that might well have come entirely off its base!! Another bit of jargon revolves around

something like “gahgahgah” in various prosodic patterns. This last one is interesting because the more obviously “meaningful” term GAHGAH has generalized quite reliably now to dogs, cats, and a variety of less clear-cut cases of animate beings. Also, there is a sound that is only marginally different (and sometimes not different at all) that resembles GAHCUH which is now used for all trucks and large vehicles, oddly shaped moving machines (including a pedicab at the zoo this morning), and garden hose. She has also made this sound while pointing outside (at the back or the front of the house) in an apparent request to go outside.

This morning Julia seemed to say “AHGAH BABA” with an odd suffix at the end that I couldn’t quite understand. I was quite excited at the possibility that she was trying to say her first “sentence”, i.e. “allgone bottle”, particularly because she was pointing at her empty bottle at the time, and because this new meaning now seems so well established. However, I’m beginning to think that she was saying “allgone” followed immediately within the same prosodic pattern by her babble string described above (i.e. “AHGAH babiddabah”). In either case, she is clearly coming closer to trying to approximate a sentence contour, inserting at least one meaningful word.

Julia took my pen from me this afternoon and pretended quite deliberately to “write” all over a term paper that I had just graded (fortunately for the student, the cap was over the tip of the pen). She then brought the pen over and set it on the table next to me. While she wasn’t looking, I took the pen and placed it out of sight. A few moments later she returned to the table and looked very puzzled, then maneuvered around a set of obstacles to come over to me and look in my lap. I think this might be an instance of ‘inferring an invisible displacement’, i.e. “You must have been the one that took it....” If so, that is quite interesting, since the literature suggests that this ability is reliably associated with the first productive use of the word “allgone”. On the other hand, I was the one who had the pen originally (although I had been seated somewhere else at the time), so this might just have been a case of going back to the original source when something is lost. I may try a few more hiding games in the next few days to see how extensive the invisible displacement phenomenon is right now.

We have had a couple more comprehension festivals. Last night I got her to “put the baby in the playpen”, “put the little man in the stroller”, and “put the people in the car” (the car in this case being a plain cardboard box that she had been moving around the floor. On a whim, I asked her to “read the book to the baby.” She looked around and picked up a newsprint flyer (nice generalization from “book”, I assume) but then became somewhat confused and ultimately took the flyer over to her father. She brought me a fragment of cracker to see, and I told her “there’s a cookie by the TV.” She went over to the TV and picked up the cookie, and brought it back to me. Immediately after that, she picked up the cookie and the cracker fragment and walked back across the room to place them neatly on the television table. Several times she has picked up napkins or baby-wipes and spontaneously wiped up non-existent drops on the floor (as well as the frequent real drops). Today I asked her to “wipe the window” when she was standing near the glass panes of the door looking outside. This one didn’t seem to work at all,

although she stared at me for a very long time. (Speaking of wiping, for the first time today she tried to “help” me change her diaper, by picking up a kleenex and applying it to her own vagina as I leaned over to get a fresh diaper.)

5/22/84. There seems to be another albeit somewhat nebulous addition to Julia's understanding of “the language game”. It now seems to be the case that talking calms her more than singing (e.g. if she is crying in the back of the car) but the only way that works is if I use a very exaggerated prosody and insert a lot of the words that she knows. Similarly, I used to read her books by ignoring the text altogether and just pointing out objects and naming them. Now she seems to enjoy listening to me read the text, instead of impatiently pushing ahead to the next page if I try to read. I find it interesting that this new pleasure in connected discourse is happening around the same time that she has dramatically increased her jargon-like chattering—as though she is now trying to ‘sound like sentences’, precisely because she now enjoys listening to sentences. There may be some unifying development in her ability to segment speech responsible for both changes.

I am still “dada”, at least in production. If she is asked to “give X to daddy” she invariably, goes to her father; and if asked “Where's mommy?” or “take that to mommy” she pretty reliably goes to me. And yet, when she sees me coming into view she very typically smiles, laughs and cries out “dada!” Perhaps this is a ‘general delight sound’—except that she is much less likely to use that word for other people and/or other interesting objects and events. So I'm still inclined to think that “dada” means “parent”, but that her father is the prototypic member of the parent class. In fact, if there is any sound that is more often associated with me than with her father, it is now “baba”—based, I think, on the fact that she calls the breast as well as bottles “baba”.

5/25/84. This morning Julia looked at the telephone, said “teyyoo”, picked it up and put it to her shoulder/ear area with the right hand, and reached out and waved (with her open-shut gesture while saying “hi”).

Yesterday I tried to get her to brush her hair with a toy spoon. She wouldn't brush her own hair, but did try to brush mine. I also tried to get her to “drink” from a toy car. She held the car to her mouth and repeated my “mmm!” sound.

The allgone word has generalized from cups and bottles to other kinds of finish/disappear notions, e.g. dropping a cheerio from her highchair. There are also frequent uses during play that I can't decode at all; I don't know whether they are simply babbles, or comments on disappearances/displacements that are just not obvious to me.

J definitely has the word “hot”. She applies it to the stove, to hot cups of coffee in my hand, and to bits of hot food placed on her tray. She reacts to the word “pretty” in a stereotypic way: placing her hand up on her head and feeling for her barrette—apparently because we so often say “You're so pretty!” after putting in her barrette.

6/2/84. A few days ago I put two flat cylindrical wheel-like blocks on either side of a plastic stick and handed this abstract form to J to see what she would do. Her first reaction was to hold one flat end to her nose and sniff, saying something like “towah” (flower?). I modelled telephoning with it, and she

promptly complied. I also managed to elicit a third scheme from the same object by modelling hair brushing. However, when I tried a fourth permutation, pushing the stick through one end and treating it like a bottle, she lost interest. The next day, when she saw the same construction, she picked it up and carried out the telephone gesture.

Julia's word system has collapsed again: almost everything is named the last few days with the single sound “gahgah”, except for balls, bottles, bears, babies (all reliably “baba”), parents (dada) and a few old reliables like “hi”, “shoe”, “juice”. “Allgone” is still a special favorite, however, including some applications in play (e.g. while feeding a Fischer-Price person in its toy highchair). And yet even that is at risk for falling into the black hole of GAHGAH these days:

Meanwhile, Cindy says that J now quite clearly goes about saying her own name, and saying “mommy”—although the context for the latter is unclear. I've seen her say both “my” (while taking/walking away with a treasure) and have also heard a lot of “mommy” the last few days. However, both of these words have occurred while Julia was (for the first time) pointing at her own chest. There have been several occasions in which, trying to work through J's confusion over parental terminology (and probably, given our lifestyle, parents as well), I have pointed to myself and said “I'm mommy” while pointing at her father and saying “that's daddy.” It may just be that she has analyzed point-at-chest and “mommy” as a matched set, turning them back to us just as she found them!

More evidence for comprehension, of the following items: “fish” (in books or to real fish), “purse” (in books or in real life—she has also tried several times now to put my purse over her shoulder and walk away with it), “butterfly” (so far only in books, but several of them), “cup”, “spoon”, “highchair”, “pants”, “shirt”, “bunny”, “turtle”, “duck”, “girl”, and many of the old favorites—all in the evening pastime of pointing in books in answer to my requests.

Also some new symbolic play items. When J took part in an experiment at UCSD a couple of days ago, during free play with items for the subsequent test, she was handed a toothbrush (which she now knows all about and plays at all the time) and toothpaste (which she has never held in her hands before as far as I know). She immediately pretended to spread paste from the tube on the brush and brush her teeth with it. Also, J has done a lot of caretaker play in the last week. She diapered her bear successfully (with a little help from me), put a bunny in a shoebox and carefully brought it into another room and set it quietly in the corner, and put a doll in the swing outside and tried to swing it at Cindy's house. I've seen various efforts to wrap dolls and Fisher-Price people in cloths and papers, although the target task was not obvious.

When Barbara babysat for J last week, she had (at my urging) tried to forgo the usual evening bath and just wash Julia off with a cloth in the bathroom. Julia whined and pointed insistently into the tub until Barbara finally relented and gave her the usual bath. Life routines are, obviously, getting quite established now.

Julia seems to use her right hand more and more of the time lately, including the execution of her first artwork last week (several red streaks on a piece of yellow paper....) The right hand

seems to be the one used in empty-handed symbolic gestures and in pointing—although this may not be new, since it is a problem I've started to think more about lately, and have only begun to watch systematically.

George thinks that J has a gestural “name” for horses and rocking chairs, which involves a jerky up-and-down motion with bent knees. She will even do this for pictures of horses in a book.

6/4/84. Julia spent about ten minutes tonight insistently diapering and re-diapering a two-inch Fischer-Price baby inside one of her own (comparatively) mammoth diapers. This included hugging the diapered baby a couple of times in between. She also took the baby into the bathtub with her and washed it thoroughly with a washcloth, then took the washcloth and wrapped the baby in it holding it to her chest in much the same way that we wrap her in a large towel and hold her to our chests at the end of the bath. Later she was putting FP people in and out of one of her shoes. I took the shoe, thus peopled, and said “This is a car. Vroom!” while scooting the shoe around the floor. She repeated the vroom sound and scooted the shoe around herself. I said “Is that a car?” She answered “cahcah” and went rooting around in her toy box for a set of small wheels connected to a flat frame (which once housed a small chocolate vehicle on top), pushing that around the floor and saying “vroom”. After that, she pulled out a red wooden car and repeated the performance. Later on, in her bedroom, the same push/vroom sequence was executed with her FP bus, after she had carefully positioned the FP baby inside. I think this is the first time she has used the “vroom” sound, so it is interesting that the generalization was so rapid. She also went over to her shelf of toy animals tonight and pulled out a hand puppet of a dog, placed her hand correctly inside, came over to me and seemed to try and “bite” my finger with the dog. On the other hand, after all this virtuoso symbolic activity, we tried to work a jigsaw puzzle and she performed well below her own peak level at ten months. Curious. Her total disinterest in towers and other construction activities is also curious, given her quite sterling performance in such combinatorial, activities around 9–10 months. Apparently she now has another hobby....

6/10/84. I forgot to mention that, a couple of weeks ago, Julia showed a version of the word “rock” (pronounced “accah”) at Beverly's house, for rocks and stones of various sizes (this is after a period in which she referred to rocks and clumps of dirt as “baba”, perhaps meaning “ball”). In the last few days, however, rocks are now referred to with that all-purpose sound “gahgah”. She does, however, seem to be trying to split off a separate sound “behbee” for babies and dolls. Also, there is lots of new experimenting with “mahmee”—often for me (even in calling me while going from room to room but also in other less obvious contexts. Cindy says that Julia also sometimes calls her “mommy” (not surprising, since that is what Cindy is called all day by her own children), but also said quite distinctly “Hi Cindy” this week.

There have been several other examples of ‘almost sentences’, i.e. single-word utterances very close together but with separate intonation contours. These all involve permutations of very familiar words like “hi, dadda” or “allgone, juice” or “baba, allgone”. Other times she looks me straight in the eye, and with

utmost seriousness, says two or three completely incomprehensible syllables. She now gets quite frustrated when she is NOT understood (after her initial wonderment that language works at all), and will often grab George or me by the shoulder, elbow, hip, whatever is handy, and try to push us up into action, out into the kitchen, toward the outside door, etc., while muttering the same strings of incomprehensible and utterly sincere syllables.

This morning after George emerged from the shower scantily clothed, he sat down on the living room floor and pretended to be a baby waiting to be diapered. After being told “Daddy needs a diaper”, Julia went quite deliberately through two rooms and into her own room, and returned with a plastic bag (filled with one of her own dirty diapers, filched from the diaper pail) and a tissue (which had been dropped on the floor in her room). She went over and wiped George's bottom with the tissue, then while we were rolling with laughter returned to her room and brought out a fresh clean diaper.

Later on this afternoon we bought her a toy shopping cart of her own. She has pushed it around for an hour or so since, loading it with various objects from the floor, etc. She pulled at the inner basket as if she were trying to close it up, like the ones in the supermarket (this one doesn't close). George started to play shopping with her, complete with paying money, loading a filled shopping bag in the car, and returning to the kitchen, to put the groceries away. Julia solemnly took blocks and cylinders from the shopping bag and placed them on shelves in the refrigerator.

J has also elaborated her Fischer-Price play with a few new furniture and vehicle items purchased today. I modelled flying the toy airplane around with a “vroom” sound. Five minutes later she picked the plane up and soared it about, then threw it quite deliberately for a distance as if trying to make it fly. She moved the other vehicles around the floor with a vroom sound, but never in the air, so she has apparently understood the point. There was also much work at putting people into their beds, into chairs, into their cars, and back again.

We are leaving for Rome, Julia and I, on Wednesday, a terrifying journey. I will have to keep my notes by pencil there, but am anxious to see how she will handle all the changes (including changes in the language around her).

7/5/84. We are back from our journey, with several pages of notes. Overall, J's vocabulary has NOT expanded very much, and many of the old words have still failed to reappear. A few old reliables like JUICE or CHEESE or SHOES have shown up once or twice. However, the operative vocabulary right now seems to consist of ALLGONE, GAGA, BABA, DIS, HOT, HAT, HI. WADOO (water) is marginally reliable. But there are some interesting events nonetheless.

First, her “abbidabah” nonsense sound is very common, and its meaning is now clear: it is used to anticipate or comment upon large body movements by Julia herself (climbing up, getting down, being picked up, moving up or down stairs, etc.). I finally realized on this trip that it comes from a sound I had been making unconsciously when picking her up (something like “hupdibbah”).

Another interesting development is in the now quite clear proliferation of two-word utterances, despite her limited on-line

vocabulary. ALLGONE BABA has been observed many times now, in a range of circumstances (but all involving bottles). ALLGONE GAGA occurred several times during our one-day stop at Jane's house, to comment upon the many and varied disappearances of their many and varied cats. DIS BABA first appeared when J was looking at a little boy playing in the courtyard below. It was reported the next day in an odd circumstance: the babysitter Francesca took J to her mother's house, and as J watched F's mother trying on a dress before the mirror and examining herself, J walked over to the mirror, held her own dress out, and said "DIS BABA." In imitation (immediate and deferred) J repeatedly produced BIG GAGA after Francesca started a game of talking about large and small dogs and asking J which she wanted. Finally, on the way back from Rome again at Jane's house, J threw baby John's juice bottle in the wading pool and said "WADOO BABA." These are quite clearly multiword utterances, i.e. encased within a single intonation contour, although both words do receive heavy stress (e.g. "WAdoo BAba").

Some other language examples from Rome include the following. The sound "VVVV" and/or the back-and-forth gesture with her hand in the air are now given quite reliably to the sight of airplanes, to the word airplane, to toy airplanes, and/or to the sound of an airplane overhead. At the Rome zoo, J tried to imitate and extend the word TIGER (pronounced TIYA) several times, but ended up calling almost all of the caged animals "DOODOO", a sound that I had not previously heard. She learned the word BUA (meaning "owie", and pronounced BOO) in Rome while pointing to insect bites on her legs. After a day or two, the production version disappeared while the receptive one (with leg-pointing) remained. While Ruth Miller stayed with us in Rome, J seemed many times to try to say "Ruth", and certainly responded appropriately to the name; similar efforts occurred with Virginia. However, I did not note any names for Francesca.

Once her father was not around, the word DADA virtually disappeared, except for a couple of occasions around men. She did correctly identify her father in a photograph, and addressed him immediately upon returning yesterday. But she did not address that name to me anymore. Instead, she seemed often to call me BABA—although it could be that she habitually asked me for bottles immediately on seeing me. I'm just not sure. The sound MAMEE still seems to function as a general request. Interestingly, on one occasion when she pointed to my nipple and said BABA, I pointed back and forth between her nipple and mine. The next day, she pointed to her own nipple and said BABA.

Generally, it is worth pointing out that Julia was quite upset by all the changes and separations of this trip, showing anger toward me more often and in greater degree than ever before, plus terrible separation scenes when I had to leave her with Francesca in the morning for work. Indeed she began to anticipate F's arrival, crying when the doorbell rang or when I started to get dressed, and trying to push F out the door when she arrived. In general, she developed a strong resistance to getting dressed, often throwing tantrums. This included a peculiar insistence upon wearing the same outfit that she wore on arrival in Rome—similar to her attachment at Grandma's in

April to a jacket that she had worn on arrival. It is as though she believes the original outfit will (like Dorothy's ruby slippers) return her back home. However, she was otherwise extremely social and pleasant with everyone, making a fabulous hit with the Roman populace. She showed about fifteen minutes of cold avoidance upon seeing George at the airport yesterday, but melted and ran around with joyous affection at home the rest of the evening. Today there have been a couple of episodes of crankiness and upset (especially when I left to do some errands), but she is readjusting to time, sleep and food remarkably well.

J picked up several gestural routines in Italy, besides the above BUA example. She learned to give kisses (in the air, without pressing her mouth to the kissee), to say SHHH with the appropriate finger-to-mouth gesture, to twist both hands back and forth in the air to a song called FARFALLINA, to put her finger in her cheek and twist it back and forth in response to BUONO (the Italian word for "good"). George notes that J made the buono gesture spontaneously today when eating good things and when going into the sunshine.

I had also used the back-and-forth gesture with index finger in the air together with saying NO (something Italians commonly do). J now does this spontaneously when commenting something wicked of her own, together with a headshake. At Jane's house she gave both the gesture and headshake to baby John who was approaching the forbidden television knobs. She also began saying the word PEEKABOO (pronounced PEEKABAH), first with me and then later in spontaneous hiding play with John.

I had the impression in Italy that new nonsense strings were entering her babbling repertoire, sounding a lot like Italian phrases such as NON VOGLIO ("I don't want") plus a few others. This is, however, hard to document with any precision.

George commented that, all day long today, Julia keeps saying the word WHY, quite clearly, but with no obvious meaning. Also, "B" words are finally starting to differentiate again, back into BUH for bird, BAH for balls, BEHBEE (for bears and babies), and some versions of BABA that seem to stand halfway between P and B for apple and a couple of other things. Similarly, the GAGA group may be about to split up, since the word for "car" is now GAH.

There were some very interesting developments in symbolic play this trip. Besides lots of feeding, diapering, bathing, etc. of dolls, there were some new items. After one exposure to our putting camphor ointment on her legs from a small tube, J imitated the activity with great precision for days every time she got her hand on the (closed) tube. This included a prolonged bout of applying "ointment" from her own baby bottle in the back seat of the car. One evening while feeding her I tried the old trick of treating the spoon as an airplane seeking a mouth-hangar. This didn't work at all. However, a few moments later when a plane passed overhead, J picked up a string bean and moved it back and forth in the air while saying "VVVV". Then she decided that the bean was a spoon, trying to pick up rice at the end and bring it to her mouth.

On the plane from Rome, we had some extended play with crackers. First she placed them in an intricate rectangular design, then grouped them into piles. I suggested "Is that a car?" and she began pushing a cracker back and forth across the tray saying

VVVV, and CAH. I then tried a Jerry Kagan test for relational concepts, putting a large and a small cracker side by side and saying “Here’s a mommy and a baby. Where’s the baby?” She answered by pointing to the small cracker. Then I asked “Where’s the Mommy?” and she pointed to the larger cracker. I tried this again by breaking the larger cracker into a big and a small piece, and got the same result. On several such trials, J made a couple of errors but performed well beyond chance levels.

Comprehension still seems excellent, though not entirely reliable, often for rather complex requests. She also picked out rather minuscule and abstract flowers and rocks from a picture book, upon request. When I talked to her various times about daddy, Cindy and other missing people, she became very interested and looked around with a puzzled look.

The word “allgone” is also often used with no obvious referents visible, e.g. in the morning in the dark in her crib where she may be referring to the absence of a bottle. These are sporadic observations; still, I have the clear sense that Julia now thinks and talks about things that are not there. At the Tivoli gardens (Villa D’Este) we approached a large pond with no fish whatsoever. Perhaps remembering the goldfish in various ponds where her father has taken her, Julia kept looking intently into the water and saying ALLGONE.

7/6/84. While George was watching her yesterday, Julia spent a very long period of time engaged in constructing a rectangular pattern out of babywipes. She took each square folded baby wipe and unfolded it into its basic rectangular form. Each wipe, once unfolded, was placed in parallel (the long dimension running vertically) next to another until she had four across. Two more were thus placed, running vertically from left to right, under the first four. The last two (making a total of eight) were placed a bit more diagonally, destroying the symmetry somewhat, until J got tired of the game and went elsewhere—leaving her near-perfect grid of wipes behind.

J is starting to give surprisingly correct yes or no answers (with head movements) to a wide variety of questions: about needing a diaper change, wanting various foods or liquids, going to bed or napping, going outside, going to the car, visiting the park, looking for a doggie, etc. She also frequently goes to the room or the object that she is told to go to (this may be more obvious to me now that we’re home, where—of course—Julia knows the house better). This morning she did not want to put her shoes on, insisting instead upon wearing little slipper socks. I asked her if she wanted to go outside, in the car, to the park. She nodded yes. I explained patiently, pointing to her sandals, that she had to wear outside shoes if she wanted to go to the park. She then reached for the sandals, and helped me put them on.

7/6/84. Two interesting gestural combinations today, back to back. While sitting in her highchair on the patio, Julia had been ‘commenting’ on the sound of passing airplanes by making her plane sound-and-gesture. She also seemed to try and approximate the word “airplane” with something like “PAY”. Around the same time, I was shooping flies away with a back-and-forth hand gesture, saying “Damned flies.” A few moments later, J pointed, directly at a fly on the patio table, and without interruption moved her hand into the airplane gesture plus “VVV”.

Shortly after that, she pointed out into the sunshine toward her little tub (where, the day before, she had commented on the water and sunny day by making the “BUONO” gesture—which she will now also make to the word “GOOD”). Again, without a break, she pulled her finger to her cheek and made the BUONO gesture, as though the remark upon the goodness of the sunshine and the fun to be had out there. This is the first and clearest instance (or pair of instances) of a two-gesture combination in which each gesture involves a different component of a compound meaning (as if to say “that thing flies” or “that thing airplane” in the fly instance, and “out there good” or “sunshine good” in the second case).

7/9/84. Julia developed a little game yesterday with her father, repeated again today, of switching rapidly back and forth between two routines: FARFALLINA (while he or I sing the appropriate song while she makes the two-handed butterfly gesture) and PATTYCAKE (again while we sing the appropriate song). The game was to switch quickly and suddenly from one to the other and watch the befuddled grownup try to switch songs fast enough. She went back and forth this way for a very long time (about 10 turns each).

This ability to keep two routines on-line seems to accompany a spurt in classification skills. Yesterday at a friend’s house she sorted shapes and colors of blocks at length, with great patience. Similarly, at dinner she likes to pull disparate types of food bits apart, into appropriate piles, one type at a time.

It sounds as though J has begun to provide an empty schwa sound in front of nouns from time to time (e.g. “duh baba”) as though approximating the use of articles and other determiners. There are also more single-word sequences (in addition to the multiword utterances discussed earlier) like BABA...DADA when her father went out to make her a bottle.

7/14/84. While playing on the patio yesterday, J picked a leaf and held it up and the air and threw it, as if trying to make it fly. Then she took it and moved it back and forth in the air in her airplane gesture while saying VVVVVV. Meanwhile, today her father built her an airplane of bristle blocks, and she said the word APEE (airplane) several times. If this sticks, it will be the first example in which a vocal routine (VVVV) and a word for the same object coexist.

While playing in the living room with books and toys last night, Julia looked at a picture of babies with haloes over their heads and said “hat”. Then she picked up a yellow plastic ring, put it on top of her own head and said “hat” again.

7/21/84. I have been away for five days, leaving Julia and George at home. He reports several anecdotes in my absence. First, she has begun to extend the “SSHH” sound and gesture to sleeping and crying babies (including a page of babies in a book). Her attachment to her big cloth doll became quite intense in my absence, and she has insisted upon doing or being helped with diapering, dressing, putting on shoes, etc. Yesterday (after I returned) this included putting a telephone receiver to her doll’s ear, and putting her doll up to my breast while I was lying down napping. When we were at Seaport Village walking around, Julia turned around and began pointing to her stroller, quite upset, saying BABA. I remembered that her doll had been in the stroller at the airport for an hour while J and G had waited for me; and thought she might have remembered her missing doll. I

said “Your baby is in the car, Julia, in the car. We’ll get the baby later.” This seemed to satisfy her, and for a few minutes she would occasionally say “GAH” to herself as if reminding herself of the doll’s whereabouts.

This business of communicating about absent things took an interesting turn today over lunch. When her grapes were gone, Julia called my attention with a pronounced whine and started pointing repeatedly at the points on her tray where the grapes had been sitting. I asked “Do you want more grapes?” and she nodded smiling.

After she had finished a glass of water yesterday (pouring most of it over a picnic table, J called out insistently “DADA”, and then when she had his attention, said “Mowah”—which I presume means MORE, another first. He asked if she wanted more water, and she nodded. I took the glass and went off to get more. J started to cry on seeing me leave (I’d only been back for an hour, and this was the first time I moved from her sight), but George explained to her that “Mommy is going to get some more water.” This explanation seemed to be totally satisfactory.

On the way to Seaport Village she pointed out toward the harbor and said “DISXXXXXX WADOO”, something which sounded rather like an attempt at “THIS IS THE WATER”. There are more and more cases like this in which she seems to be providing a slot for articles or determiners before nouns.

The word BUA returned unprompted yesterday when Julia pointed to her legs and said BOO. George looked and answered “You don’t have a bua there.” She then pointed at another spot on her other thigh and said BUA again. Later on, while we were at Seaport Village standing near a flowering bush with thorns, I warned Julia about the thorns, pointing to them and saying BUA. She repeated the word several times thereafter, pointing at the thorns and/or looking at her finger (which suggests that she may have lightly pricked herself while I wasn’t looking).

George reports a still more complex construction pattern this past week, involving about 15 colored bristle blocks. First J made a pattern of 8 long blue blocks, each placed running vertically, four across the top and four across the bottom. Then, to the north of the blue display, she started a similar grid pattern of about 7 square yellow blocks until she got bored and quit.

7/22/84. Yesterday we bought Julia 100 colored wooden blocks of varying shapes, to supply her new interest in classification and construction. George did some building in front of her yesterday, but she tried little herself. This morning, however, after watching him build a tower, she began to build one herself out of tall purple cylinders less than an inch in diameter. George did not help her, except to say “careful” as she placed each one (which seemed to slow her down and make her adjust the cylinder more carefully) and applauding every addition. Julia managed to create a tower of seven thin cylinders, a feat that George himself had a hard time reproducing when trying to show me later!

Accompanying this boom in spatial relations and construction, I’ve noticed that Julia has gotten much better at detours. A few weeks ago, if a desired object lay, for example, on the floor on the other side of a chair and table, she whined and reached futilely. Now she will try several alternate routes if one is blocked, including routes that take her temporarily in the opposite

direction of the goal. It is very tempting to infer that she is planning these routes internally in a new way.

She also said TOWAH to me later, pointing toward the blocks, and began, with George’s prompting, to say “block” (still more like BLAH). Later, when we went through a long doll-dressing sequence, she began to say the word SHIRT after me (pronounced SYAH). She also brought her doll into the bathroom where I was, pointed to its shoe and said BABA SYOO—another original sentence. In this example, there was unequal stress on the two words, with heavier stress on the word “shoe”.

At the zoo later today, she got into the game of locating and naming hats (saying HA—she approximates the “t” final in HAT and HOT by an abrupt cessation of the vowel) and patting the top of her head. She does this now to hats in books, and to hatted people at such a distance that I often don’t know what she is talking about for several minutes. (I think she must be farsighted.) When we saw the turtles at the zoo, she began to name them (pronounced TOODOO), and also pointed to a tiger on a book cover, saying TIYAH. With all these new or relatively new words in one day, Julia seems to be on a roll....

7/24/84. The finger-to-mouth SSHH sound/gesture is applied very generally now to sleeping or crying babies (in books, overheard in the supermarket, etc.), and to any animal that appears to be very still or sleeping. We had several examples yesterday in the zoo. Also, this gesture is often run together with the word BABA or GAGA like another ersatz sentence. In fact, there seem to be many more instances now of successive single-word utterances like BABA..SHSH, GAGA...SHSH, DADA...BABA (when daddy is getting her bottle). All of this is nested within some much more differentiated but still (to me) unintelligible jargon with very deliberate eye contact, pointing, very pronounced intonation contours (like strong-minded declarations or persistent questions).

In the now frequent block-building episodes with George, J has begun to use the phrase I DOO DAH (I do that), spoken like a multisyllabic word. It is used appropriately when she takes a block and takes her turn at placing it. The same phrase also comes up in some less clear contexts that may also involve her planning to carry out some act (e.g. reaching toward the kitchen counter toward the lid of the pasta container, which she had taken on and off repeatedly the day before). This phrase is quite unlike her other more nominal expressions.

She is also now quite clearly commenting on absent referents. Yesterday when I picked her up alone at Cindy’s (for the first time in a couple of weeks), Julia began asking repeatedly and persistently for DADA, for two hours until he was home. Every time the sound of a car passed outside, for example, she would point toward the door and say DADA, and she often went to the door without any obvious cueing. While she watched me empty the dryer, she picked up one of her father’s socks and said quite clearly DADA; similarly, she said his name while looking at one of his block constructions on the living room floor (I should note here that George has so far used Julia’s hundred blocks to construct several temples and pantheons, an aqueduct, an amphitheater, and the Circus Maximus). Other examples of conversing about the outside world include long bouts about GAGA the day after we saw several cats and dogs outside. When

her father was pretending to be a lion and crawling toward her growling, she also said GAGA to him, a “spirit of the game” pretend-naming. She then went back and forth saying DADA .... GAGA .... DADA .... GAGA.

7/27/84. Julia's successive single-word comments are getting longer and longer. At breakfast this morning she said “BABA (apropos of what I do not know, she was pointing out the window)...SSSSHHH..... ALLGONE.” Possibly she heard a baby crying which I did not hear (this often happens—her hearing is obviously better than mine), and then the crying stopped.

At home this evening, I had received some pictures of Julia and cousin John in the mail, from our Chicago trip. One was a picture of J&J playing by the wading pool with Julia holding up John's baby bottle. Julia pointed at her own baby bottle and said BABA and without hesitation pointed at the bottle in the picture and said BABA again, in an absolutely deliberate comment on comparison.

A while ago, while playing blocks with George in the living room, she responded to his question “Will you fix it?” by saying “I FISS IT”. The you/I alternation here is a bit spooky, if it is reliable.

Over dinner when I told her that her beans were still too hot to eat, from some distance she made the gesture of blowing on the food. I'm not sure if she meant this as a comment or a request to me, but George says he's seen a similar behavior several times.

7/28/84. Yesterday we were walking around the neighborhood, and had just seen a small baby around the corner. The day before, on a similar walk, at the same spot, we had seen a cat. On this second occasion, Julia insisted on rounding the corner again to see the Interesting Thing that had been there. As we came around, she produced the first evident self-correction that I have heard: “GA...BABA”—as if she were starting to comment on the cat (which was yesterday's find) and then remembered that today's goal was different.

Her phrase I DO DAH is getting more and more common, as a comment and as a request to be allowed to do something herself. It is interesting that, at the same time, the ubiquitous ABBIDABAH is waning.

She spontaneously produced “banana” (ANA) at the refrigerator today. Also, when I gave her a small tiger from my jewelry box, she named it over and over again, put it in George's Circus Maximus to run it around, and carried it around quite a while.

In the tub yesterday I noticed that J got up on all fours and then said GAGA, as if to say “I'm a doggy now.” George says that he's seen that several times.

She has a new word that sounds something like TADOO. Its use is not entirely clear, but it seems to be when she is about to handle something she suspects she shouldn't have or do something she isn't supposed to do. I remember that I very often take things away from her that I don't want her to have and accompany that with “Thank you.” So this may be a version of THANKYOU, for a markedly different purpose.

Today I tried the experiment of putting rouge on her nose, to see what she would do upon looking in the mirror. The literature suggests that, around 18 months, infants touch their own noses as if they really understand that the image in the mirror is

themselves. Well, if so, Julia doesn't. She merely stared in puzzlement.

7/31/84. We went to the zoo yesterday, and Julia displayed very clear control of the word TOODOO (turtle). I find it interesting that this word and the above TADOO and the phrase I DO DAH are coming in at the carne time, as though once again phonological patterns are controlling lexical acquisition. Similarly, ICE is now clearly in her repertoire, and EYES is being resurrected at the same time (however, I've yet to see her old word NICE in this set). CHEESE, SHOES and JUICE are quite common again now—as though they have come in and out as a set on phonological grounds as well. (She also tries to say SHIRT a lot, something like SHOI).

Cindy tells me that she says THANKYOU when Julia pats Ben or is otherwise nice to other babies. So this supports my idea that her new TADOO is a version of thank you. This morning she was engaged in a prolonged bout of affection, touching, hugging, etc. with her favorite baby doll, and at one point stroked the doll's head saying TADOO BABA.

Her old one-handed allgone gesture is almost always made two-handed now, quite symmetrically. It, may be that this gesture has been “contaminated” by the Farfallina routine, which is a symmetrical two-handed gesture of twisting the hands back and forth at the wrist.

Since Dan and his dog came and went this weekend, Julia keeps asking about the absent GAGA, often pointing toward the backyard where the dog was tied most of those two days.

#### JULIANOTES 4

8/3/84. Julia is now 16 months and 11 days old. According to her (late) 15-month checkup at the doctor today, she is at the 50% percentile for weight, but back up at the top on height. There are no obvious milestones in this Great Plateau of the one-word stage, so this seemed like as good a place as any for a new chapter to begin.

Despite this long plateau, I think the projected big shift is just around the corner, for the following reasons: (1) she has begun to talk so much and so often about absent referents; (2) single words are used to indicate relations and associations rather than just naming and requesting; (3) there are many examples now of successive single-word utterances, and a few fledgling but productive sentences; (4) gestural schemes are used very flexibly, with object substitutions; (5) she is at last starting to produce a more varied set of phonemes in the few words that she imitates, and her standard words like GAGA and BABA are at last splitting back off into subtypes; (6) there has been a dramatic increase in her classification/construction skills.

Some new examples of gestural flexibility include several uses of the word “hat” and the gesture of putting things on the head, recently applied to (a) a shoe in a shoe store, (b) a piece of bread and butter at dinner (alas), (c) juice glasses, bottle tops and bowls, (d) a birthday card. This morning she “diapered” her Barbie doll (hardly a prototypic baby) while sitting in the highchair, with no diaper available, using (I'm afraid to say...) the remainders of fried egg as a diaper ointment applied to the doll's nether parts.

Yesterday she pulled nine baby bottle caps out and lined them up neatly in two horizontal rows, four on top and five on the bottom.

In a rare burst of imitation yesterday, J repeated my nonsense actions of putting a cylindrical purple block in my mouth, in my ear, and then against my forehead in a ‘glooping’ gesture (from our old nonsense object study). She has also begun, at last, to repeat things after me on request. This has included “apple” (where she had spontaneously said BABA, and then responded to my correction by saying “ABPA”), and “fish”. If this “SAY X” game really takes; it should have quite an effect on her newly proliferating phonological system. On the other hand, she just may decide that she doesn’t like the game after all....

Yesterday George and Julia came crawling on all fours into the bedroom to find me, both of them growling “ruff ruff” (Julia’s sounded more like FFF FFF), with Julia occasionally saying GAGA, in case I had missed the point.

8/7/84. Julia is starting to us the sound “ucka”, but pretty much imitatively right now, when George or I say “Yuck” (in the obvious food and diaper contexts). She seems to think that it is VERY funny. I had rather thought she would get to the sound BLAH in the same contexts first, since I am more likely to use that sound. But George uses the one she has chosen—which may say something about our relative entertainment value as parents.

I think she actually uses words for both DIAPER and BLANKET, but they are so phonologically distorted that I had a hard time finding them, pronounced “BUYDAH” and “BUYKAH”, respectively.

Yesterday I managed to elicit comprehension of several body parts (eye, ear, nose, toes, hand, nipple, bottom) on the small Fischer-Price toy monkey—so this is pretty good evidence on the generalizability of body part names. She still only says EYE and EAR reliably, however.

8/8/84. Playgrounds are becoming a major event in Julia’s life. The swings have been a favorite for a long time (even in Rome). Yesterday her father hovered over her while she climbed to the top of the slide (gulp) and slid down, several times. This new set of sports was reflected yesterday evening in the 15–20 minutes that Julia looked at and chattered at a page in her nursery book with children in swings. She has known that page for a long time, naming dogs and babies and shoes therein. And she had pointed out the swings on request. But she didn’t seem to really “get the point” about the swings until now. This morning her father drew a picture of swings and a slide. She was puzzled for a moment, and then seemed to recognize them, pointing appropriately to each on request.

George went on to draw a picture of a window with a moon outside. Julia had just learned the word MOON (pronounced “boo”, of course) in the bedroom window and in a picture of a bedroom window, in a book (comparing the two, under George’s instigation. This morning she responded to George’s crude window drawing by jumping up to the real bedroom window and staring out. He also drew a picture with our house, his car, a dog, our tree in the front, and a garden hose. Julia pointed correctly on request to everything except the garden hose.

This morning her lust for swings was demonstrated when, as soon as we arrived at Cindy’s, she started well on her way on the long and tortuous path to the playground, without hesitation (I still haven’t learned that route with any confidence.....

Julia did some drawing herself this morning, using the right hand reliably to draw (but the left hand to erase, just as reliably.

When J was in her highchair at breakfast, I asked her to feed cheerios, and then cheese, to her Fischer-Price doll, which she did immediately. I then asked her to “Feed a cheerio to the tractor”. She responded at first by putting the baby in the tractor, then seemed to rethink the solution, lifted the baby out, and put a cheerio into the hole in the tractor where the baby had been seated. That, alas, led to a game in its own right, mortar and pestle with cheerios and raisins, using the FP doll as the crushing instrument.

8/10/84. As soon as we got to Cindy’s today, Julia began saying BABA, looking around for Baby Ben. When Cindy told her “He’s in bed, sleeping,” she smiled and put her own head down on the couch. We got another sentence this morning, HAT BABA, vis-a-vis putting objects on the heads of dolls.

Speaking of which, yesterday Julia served as a pilot subject, the very first one, for our new work on electrophysiological bases of language. This meant going to Helen’s lab, having electrodes with delicate wires attached by non-toxic glue and light tape to a few points on her scalp and behind the ears. J was in a good mood, having spent the day on the beach and slept in the car, and was quite placid, but resisted or pulled off about half the electrodes. Nevertheless, we went into the sound chamber and recorded from what we had while J listened to words (preselected to be ones that she did and did not know) from a central speaker inside a big colorful frog puppet. She was absolutely fascinated, staring and pointing at the puppet. When he said “DIAPER”, she touched her own pants. When he said “HUG”, she hugged the doll she was holding. She also repeated several of the words she knew best. Lord knows what it will look like on the ERP record, but the situation itself (electrodes aside) certainly worked for her. Afterwards, she sat with a doll and systematically attached electrodes to it and to herself, saying HAT, and her current word for barrette, TOODOO (meaning “turtle”, taken from her confusion between one barrette with a turtle on it and the whole class of barrettes).

The meaning of her phrase I DO DAH is clearer all the time: it seems to mean “I GOT OR AM ABOUT TO GET MY WAY!” I had been wondering where that phrase came from given that it is a frozen form: from “SHALL I DO THAT?”, perhaps, but surely not from “YOU DO THAT” or any similar phrase addressed to her. But today it occurred to me that it may not come from “I....” at all, but from “WHY DID YOU DO THAT?”, which George says frequently when J knocks over his block constructions, or makes other major messes. Further support for that comes from the day a while ago when George reported Julia going around all day saying WHY with no obvious meaning. That origin for her new phrase would perhaps explain why it tends to occur in moments of triumph and defiance.

8/12/84. Today I placed three FP dolls on my fingers, following Julia’s lead. She admired my display and then pointed directly at the fourth finger without a doll and said BABA. We looked around for another FP, found one, and put it on the

finger. Julia then pointed to my empty thumb and said BABA, whereupon we searched around for an inhabitant for my thumb as well.

This morning she spontaneously called her Barbie doll BAHBEE, presumably a new name learned from the babysitter's older daughters who play with Barbie dolls all the time.

As if to comfort me for my interpretation of the appearance of YUCK (see above), Julia has also started saying BLAH! (with a barely detectable "L" in it), and laughing just as hard. I feel vindicated!

Asked if she wanted dinner yesterday, she said "PEAS" and ran for the chair. In fact, she called grapes, raspberries and a couple of other smallish and roundish food items "PEAS" as well.

With a toothbrush that she found today, Julia dragged me to the bathroom and made me lift her up to the sink, whereupon she went through the ritual of putting the brush in water, to her mouth, asking for toothpaste, etc. Later she pretended to brush her teeth with a hairbrush. Meanwhile, this morning with the same hairbrush I asked Julia to "Brush the flower's hair", holding a carnation toward her. She obliged by brushing the top of the flower. I also asked her to "GIVE THE BABY A RIDE ON THE GIRAFFE"—an animal never before ridden by anyone or anything in J's presence. She worked very hard at placing the FP doll on the giraffe, although she finally needed a little help from me. I asked her to "MAKE THE BABY TALK ON THE TELEPHONE" while she had the FP doll in hand, and she reached around for her toy phone and did a nice job of placing the receiver against the tiny baby's head. In the same play hours, she also engaged in a long bout of telephone chatter herself, saying successively DADA .... HI.... BABA .... HI.... and several other words from her repertoire.

She pointed to her own chest and said BABA, not long after looking at and naming a photo of some infant relatives. I don't know whether this is actually naming herself as "BABY", or another version of pointing to and naming her nipples, as she did several weeks ago (except that she was fully dressed on this occasion). Julia has started asking for ICE as soon as we get into a restaurant now. However, she also asks for ICE while reaching for rice, and other food that comes in smallish mixed bits, as well as ice cream being carried around by other people. In the same vein, her very general term HOT now seems to be applied to anything that is hot, very cold, surprisingly spicy or odd-tasting.

The term TADOO not only accompanies stroking/petting now, but is also used very much like I LOVE YOU—said lovingly, from a distance, with great smiles, and the barest gesture of stroking the air in my direction.

She began naming her wading pool POO yesterday, perhaps in imitation of 2-year-old Becky who was visiting. This morning she started asking for POO and pointing toward the back door. I find it interesting that this word just came in now, because she also imitated me for the first time a couple of days ago by saying POOPOO when I named (for the millionth time) the substance I was about to change in her diaper. Also, she has been regularly saying BOO or BOOBOO in pointing to various small bites, wounds, memories of wounds, on herself especially but also on other people. It may be, then, that another little

phonological cluster has entered as a block. The difference between the B and P in these new words is barely there at all, and I wonder if it might not exist only in my ears interacting with the context.

Once again, she has started saying MAHMEE quite a bit—but it still seems to function more or less like a lament or a request, rather than my name. This morning in bed with me and George she pointed happily to him and said DADA, then pointed in my direction and said BABA. Furthermore, at the beach today Barbara thought she heard Julia call me Cindy. So my name is still unclear to her. (Note also that the new PEAS joins CHEESE, JUICE and ICE among food items—although the high-frequency term SHOES breaks up the semantic/phonological harmony of this little set.)

8/13/84. We had a huge burst of word imitation this morning: BEACH, GOT, ELEPHANT, BUS, and unfortunately several others that I can't remember.

Her father asked her if she remembered playing in the sand, and she immediately said GAGA—no doubt confused by the name of the dog next door, SANDY, who she also played with yesterday. Otherwise, however, she seemed to follow his conversation about yesterday surprisingly well, nodding from time to time.

When we got to Cindy's today, she pointed in the direction of the playground and said something like SOYNG. I've heard this sound before but finally realized that she is probably trying to say SWING. I said "You can go and swing later" and that seemed to satisfy her.

I asked her to get her toy telephone, and then said MAKE THE SHOE TALK ON THE TELEPHONE. Without hesitation, she placed the phone receiver against my old black sandal. I started a game of talking on the phone myself, and alternatively holding the receiver against her toes, her tummy, her bottom, the top of her head, "talking" for each of her body parts. She absolutely loved it, watched me intently and laughed throughout.

She brought a picture of food on the front of a cookbook over to me and pointed at various food products saying PEAS. However, once in her high chair she did definitely seem to want real peas, asking repeatedly until she got the genuine article. Later, she picked up a toy spoon in her bedroom and immediately said PEAS, running back to the kitchen. I said to her "WHY DON'T YOU GIVE THE BEAR SOME PEAS?" She went to the living room and got her big stuffed bear, brought him out and put him in her highchair. George got out the camera, I put a bib on the bear, and a long bear-feeding game ensued with Julia poking the spoon at him as well as individual pieces of food; periodically saying AHMMM!

8/14/84. This morning Julia initiated the feeding game herself, putting her baby doll in the highchair and feeding it various things. Having had pickles several times in the last few days, she initiated a pickle request saying "COCO". George didn't understand what she wanted but she went through the refrigerator until she saw them, pointed, and said "coco" again (also repeated the word to the doll while feeding the pickle to it).

Later during breakfast she was holding the doll in one hand, and precariously holding onto her juice glass with the other. I said "Careful, Julia, use TWO HANDS to hold the glass." Much

to my surprise, she looked up, set the doll down, put both hands on the glass and said I DO DAH. It seems hard to believe that she understands the word TWO, but I did give her a lesson of sorts yesterday by setting two FP dolls together next to a photograph with two baby cousins, saying TWO BABIES over and over again while pointing back and forth between the picture and the dolls.

She has started to say NO while shaking her head vigorously, about not going inside, not taking a bath, not getting her diaper changed. Also, MAHMEE is looking more and more like a name for me the last day or so: she says it while pounding on the bathroom door when I'm inside, and while wandering about the house looking for me, and while bringing me things.

Yesterday George took her on a walk with the neighbor and her little dog. Julia decided halfway through the walk to be a dog, got on all fours and started crawling along with the dog saying GAGA, laughing, and following the dog around. Later when I came home she also said GAGA, got on all fours, and tried to show me the game.

Julia was very puzzled last night when George held up his empty hands and pretended to read a book, turning the "pages", and so forth, saying things like "And here's a picture of a dog, and here's a lion...." Upon hearing the lion reference, she started pointing to the sheets, to the lion picture printed on these (admittedly unusual) sheets.

Later she started reading her books herself, pulling them out of my hand, and chattering at great length while pointing at the pictures. She kept saying repeatedly something like GUH, pointing at pictures of little girls. I said "Is that a girl?" and she nodded. I said "Show me a boy," and she pointed to a different child (a somewhat androgenous child in pants, though one that I would have inferred to be a girl. She also seemed to be saying GUH SOYING, which I think might have meant GIRL SWINGING, or at least GIRL SWING, since she was pointing to the picture of a girl in a swing.

She regularly blows on things now when they are hot, or when she is told that they are hot. This morning she was pushing the stereo button in (which is easy) and then trying to push it to make it come back out (which is not so easy). As she pushed and pushed, George said "That's hard, isn't it." She immediately started blowing on the button!

. 8/15/84. Three more imitations in the last 24 hours (one reported by Cindy: DIRT, PENNY, GOT PURSE. The latter was exceptionally nice. Julia picked up her little plastic purse, picked up her toy car (because of course one needs a car to drive to work...) and walked to the door, several times in a row, saying BYE and reaching for the door grinning. I said "Oh, you're going to work, have you got your purse?" to which she replied GOT PURSE.

Her doggie imitation has gotten more and more baroque. Now she does it while sticking out her tongue and panting markedly. Since this is NOT part of her daddy's rendition of "doggie", it must be something she picked up playing doggie next to the neighbor's dog a couple of days ago. She also growls (grinning the whole time) and makes threatening advances.

Julia is working very hard on new phonemes these days. This morning she kept repeatedly saying CHOOCHOH while fingering her ciuccio, and then seemed to realize that a diph-

thong goes in there, and began saying CHOO CHEE OH. Interestingly, given her propensity for picking new things up in subsets, she also imitated the CHOOCHOO sounds quite a bit last night when her father was reading the MR. BROWN CAN MOO book. (She also imitated the MOO sound and the BUZZ sound (though the latter was pronounced BOOO) during her father's reading of the same book.)

The new tendency toward throwing tantrums is not my favorite of Julia's new developments. There is an interesting new twist, though, that involves incorporating what are quite clearly Sarah's pouting/whining facial expressions (Sarah is the baby-sitter's youngest, a seven-year-old with quite a temper). The caricature of a lower-lip pout is so exaggerated that it is clearly imitatively derived.

8/16/84. Last night Julia was out in front of the house playing with a neighbor woman and two children. Time came for them to go home, and they said goodbye and started down the sidewalk for home at a crisp pace. Julia tried toddling after them (with her father behind her), but couldn't keep up. As they faded into the sunset she reached her arms up and cried out plaintively NO GO!! This is the first time that I have heard her use the word "go" at all, much less in a sentence context. It is also, as far as I know, the first instance of a sentence with "no".

As we were leaving the house this morning, she asked for her purse, pronounced PUSS, with (at last) the "s" on the end.

8/19/84. The NO GO example has already generalized. First, this particular phrase was used in two other contexts: when her father was trying to turn the pages in a book and she still wanted to look at the pictures on that page, and when we had strapped her unwillingly into the car and started down the highway. This morning I was taking things out of the refrigerator and asked if she wanted a cookie (which she has taken recently to calling CO again), and she said NO CO. At first I thought that still might be NO GO, in a still more general usage, but when I pulled out the cheese she said NO CHEESE.

She has started to say APPLE fairly clearly (pronounced APPUH, used for apples and occasionally plums (though she vacillates between BALL and APPLE for plums). Meanwhile, in the context of opening and closing the zipper on her purse the other day, she began systematically imitating and requesting OPEN (pronounced OPPUH). This morning I had some evidence that she has conflated these two. She was trying to force my mouth open to stick her bottle in it, and kept saying AP-PUH APPUH.

I am sure there are more sentences now nested within her deliberate and beautifully inflected strings of incomprehensible syllables. For example, I think we had CIUCCIO BABA while sticking rubber nipples on top of an empty plastic bottle. But I don't want to read too much into these strings yet, so I'm still waiting.

I AM FINALLY MOMMY! This was confirmed when I came home later than George and Julia, pulled up and heard her yell MOMMY MOMMY in delight as she pointed to the car. Now she calls me from another room, greets me when I arrive at Cindy's, wanders around asking for me at Cindy's (pointing toward the door), etc., all by MOMMY. She will also call from her crib MOMMY.....DADA.....MOMMY.....DADA, thereby

confirming (at last) my equal status with the long-present DADA. Hurray!

8/20/84. Another sentence: WATER PEAS, uttered while holding her cup forth from the high chair. George thought it meant WATER PLEASE (and indeed, Cindy has been trying to teach Julia to say please instead of whining). However, since she had dumped several peas into her water a few minutes before, I think this particular sentence is ambiguous.

Julia now says UP!, not when she wants to be picked up, but when she is pulling at George or me and insisting that we get up and entertain her. She may also now have a verb GO, perhaps the same meaning nested within NO GO, meaning DO SOMETHING. At first I thought she meant CO, since she seemed to have learned the contrast between HOT and COLD when playing on the warm versus cool sides of the pool with Barbara at a pool party this weekend, saying HOT on the hot side and CO on the cool side. Also, she has said CO when picking up a glass full of ice. But I think CO and GO really have separate meanings, at least now.

This morning the neighbors from across the street called out "HI JULIA, WHAT HAVE YOU GOT THERE?" First she held out her cracker and said CACKAH, then her pacifier and said CIUCCIO.

She got to ride on the train at Balboa Park three times yesterday, and has been saying CHOOCHOO to anything remotely train-like since (unless, of course, it is a car, or CAH). In fact, this morning when George asked her DO YOU REMEMBER THE TRAIN? she said CHOOCHOO.

J has also been using the word KEYS quite productively now. This morning she picked up the word PIECES and used it extensively for an hour or so to refer to the various pieces of the jigsaw puzzles we were playing with. I'm fascinated by the phonological similarity of many of these conquests: KEYS, PEAS, PLEASE, PIECES, ICE. At least lately she will try to imitate words that don't fall into one of her phonological templates, but they don't tend to stay around long or generalize. For example, she has tried several times to say ELEPHANT (pronounced EFFA), but doesn't seem to be able to make it stick—even though yesterday she was given a new plastic elephant, which she loved, and shown elephant pictures in picture books, comparing the toy with the pictures at great length. FISH (FISS) is another example of a word that she can't quite keep hold of even though she clearly understands it, and has tried it many times over the last few months. NOSE and especially EYES are in her repertoire, but MOUTH (though she understands it perfectly) is not. And so forth.

8/21/84. George says that Julia called a CHAIR a CHEERIO in the bathtub last night. Given the rather large semantic distance between chairs and cheerios this seems like another example of a phonologically based confusion (either ours or hers...)

8/23/84. Julia is 17 months old today. We had another body parts festival in the car yesterday. She pointed on command to her leg, arm, barrette, hair, ear, nose, eye, belly-button, foot, toes, and to corresponding parts on me and George (insofar as possible from the back seat of the car). I asked her where her vagina was, and she said NO, which of course had Dada and me rolling in the aisles. I showed her vaguely where it

was (through diapers), and the next time she was asked (an hour or so later), she pointed correctly.

The concept of BOOBOO (owie) is very well established and general now. She has used it for a broken rock, and for an unintentional eraser smear on a drawing we were doing a couple of days ago. Last night we went with visitors to the carousel in Seaport Village. Julia got quite upset about a horse with a broken foot (wrapped in a red cloth), and kept pointing repeatedly saying BOOBOO. Afterwards we went to kiss it and make it well, which seemed to help.

There are also more and more quasi-sentences, or successive single-word utterances that gradually squeeze together into one. DADA...CAR this morning was a good example, when he had temporarily disappeared to put out the trash and she apparently assumed (quite upset, pointing outside) that he had left for work without saying goodbye. Also, when I was standing outside the car waiting for George to unlock the door, George asked her, "Shall we let Mommy in?" She said CAR...MOMMY. There are more and more new examples of combinations with ALL-GONE (BOOBOO, CAR, etc.)

Julia said SHOES yesterday (a common theme, and an insistent one these days), and George answered "Do you want your shoes?" She answered "WAN SHOES." She also now uses the word SEE to draw attention to something she's interested in.

8/26/84. Julia has been home for three days with a fever and a sore throat, so we've seen a bit more of her than usual. There is nothing really startlingly different, but a few interesting insights.

One observation has to do with memory. We went to the doctor yesterday, to the same examining room where we'd been for her checkup 22 days before. After Julia looked around the room for a while, she pointed to a toy box in the corner and said BABA. There indeed hidden below the other toys we found the doll she had loved to death the last time (protesting fiercely when we had to leave it behind). After playing with that for a while, she pointed to the box again and said APPUH (APPLE). I was puzzled, but then remembered the large apple toy that she'd also seen before. I went and retrieved it, and she smiled and said APPUH over and over. Another shorter-range sample of memory occurred last night. George was going through one of her twenty-odd books, and she kept going to the last page all perplexed and saying TURTLE (TUHTUH). I finally remembered her interest days before in the turtle on the last page of one particular book, and went and got it. Even though George had managed to locate five or six turtles in other books, it was clear that the particular one she wanted was the one I brought back.

The new turtle interest showed up last night in her second animal impersonation (the first being the ever-improving rendition of GAGA). George started it by putting a pillow on his own back and crawling around with it. Julia immediately insisted on one of her own, crawled about and added sound effects (a kind of short growl very unlike her doggie noises, but quite similar to the giant tortoises we see at the zoo). She would also periodically say TUHTUH to make sure we got the point.

I can now proudly announce that the words PEE and POOPOO are firmly ensconced in her vocabulary. The former really came in solidly yesterday, when we were following doctor's orders in trying to take a urine sample (three times, two

failures) with a cumbersome taped-on bag of sorts. When the long-sought urine finally appeared, she looked down between her legs and proclaimed PEE!! The latter term is still used, grinning, entirely during the diaper-changing operation, and has yet to appear in a description of dirty diapers or a request for a change.

Another phonological point: ever since MOMMY became so clearly established a week or so ago, she has honed right in on words with the long “IEEE” sound. PEE is one. SEE is another. She vacillates now between BABA (her “real”, communication-oriented word) and BEHBEE (a word she is still playing with for dolls and babies). Two nights ago, when her fever and discomfort woke her up, we brought her into bed with us. At one point I said to her “Okay, are you happy here now?” A few moments later in the dark I heard her clearly say “MOMMY..... DADA.....HAPPY”. Also, she climbed up to look at her bottle going around and around in the microwave the other day, and before it stopped (whereupon it usually makes five irritating beeps), Julia said BEE BEE BEE.

On a different note, I've noticed that she now distinctly pronounces the final consonant in HOT. This coincides with her imperious new word UP, with its own very crisply pronounced final consonant. I also heard one example yesterday of HAT with a newly clear T at the end.

Since the change in her ALLGONE gesture from one to two hands, I haven't noted any new gestures or changes in gestures. Many of the old ones are now fairly rare. For example, she picked up a friend's pocket calculator today and I said (remembering an older instance) “Is that a telephone?” She did immediately respond by holding it to her ear. However, she no longer gives the telephone gesture spontaneously to a picture in a book, as she did weeks ago. The same is true for HAT, BRUSH, and a couple of others. The only one that appears with any regularity the last week or so is a full-body-hugging gesture (arms wrapped around her own torso) which seems to mean “love”.

8/27/84. Yesterday, after I had written about the contextual limits on POOPOO, she went over to her doll in the living room, pointed to its diaper area and repeatedly said POOPOO. She eventually brought each of us the doll and insisted that we go through a full-fledged cleaning and diapering sequence.

She is saying HAPPY all the time now, apparently correctly, meaning that she feels (often temporarily, at least this weekend) content and pleased. It differs from I DO DAH, which has more to do with triumph and getting her way.

The word CAH (CAR) is used constantly lately as a request to go out. Also, she saw a clip from one of the century car seats inside the house, picked it up and immediately said CAH this morning.

8/29/84. The cheerful new term POOPOO seems to be occurring in different contexts still, i.e. pointing to the garbage in the kitchen yesterday. She also said UCK (YUCK), laughing, at the same time.

Julia shoos flies away now, either by waving at them, stomping on them, or, blowing on them. She seems to have the word BUH (BUGS) for flies and other insects.

Yesterday while we were all out on the patio (and hence away from kitchen cues), I said “I think I'll go in and make some vegetables for Julia.” Presumably because she heard me

say “vegetables”, J immediately said PEAS. I'm not sure, though, what the scope of PEAS is for her: peas only, all vegetables, or indeed a generic name for food.

When George took the coffee beans out of the freezer, Julia wanted to feel the bag. She held in briefly, and then said ICE.

More sentence-like stuff is emerging from the recent strings of unintelligible utterances. MY DADDY was a proud and crystal-clear sentence yesterday. MY and something like MIAMI-MIA have been played with lately, but this one seemed entirely intentional and correct. This morning she said DUH BABA (the baby?), followed by I GOTTA BABA. She still seems quite tolerant of the homophony between BABA for bottle and BABA for baby, although it is getting increasingly inconvenient. This morning she went up to the drawer where her bottles, nipples, etc. are kept and said BABA, then opened the drawer and started playing with her bottle paraphernalia.

She has been saying OHOH (with the usual sing-song intonation) when things drop, break or spill. Yesterday I also heard her say OOPS. HI and BYE are being used with renewed vigor. On an evening walk in the stroller, she waved and said HI then BYE several times to the moon, to various cats and dogs we passed, and to people. She also tried to say MOON (but it sounded more like MMMM and occasionally MUH).

I've noticed that ALL vehicles are now CAR; the old word TRUCK seems to have completely disappeared. We've also heard very little lately of the once-ubiquitous ABBIDABAH. It now seems entirely replaced by I DO DAH, even for the old context of gross motor movements, going up and down stairs, etc.

When we went down to Seaport Village this evening, Julia began saying SISHEE over and over. I didn't realize until the carousel hove into view that this is her new pronunciation of HORSIE. Interesting that she figured out where we were before she saw the merry-go-round.

9/1/84. Yesterday witnessed a full-blown set of potty imitations, with no urging on our part whatsoever. First, after following me into the bathroom and witnessing my own ministrations, Julia set her teddy bear on the closed lid of the toilet, said “PEE”, procured toilet paper, wiped the teddy's nether parts. Then she got a nearby Fisher-Price doll (2 inches high) and repeated the sequence. Then she began wiping carefully at her own diaper with toilet paper. Later on in the day, alas, George caught her in the bathroom trying to climb up on the open toilet to sit there herself (which could have been disastrous). I hadn't planned to initiate any kind of toilet training this early—and given the way the Julia quickly drops new interests, perhaps we shouldn't.

Lots more single words used in a sentential fashion: MOMMY addressed to my shoes, to my car, to other possessions provide some of the clearest and most interpretable examples.

This morning she produced an interesting speech error. She's been saying MOMMY DADDY and DADDY MOMMY in rapid succession quit often lately. This morning she came out with DAMMY, and then stopped, a bit puzzled and embarrassed.

The BOOBOO concept continues to develop. Besides pointing out endless small physical flaws on me and George (e.g. BOOBOO addressed to a small mole on my chest), Julia

seems to have figured out that there is a relationship between blood and wounds. She got rather upset over dinner last night staring at her catsup-covered fingers, held them out to me with a concerned expression and said BOOBOO. She also noticed the red tongue inside the open mouth of her plastic tiger, pointed it out to her father and said BOOBOO. Given her proclivity for joining together phonologically similar items, I'm rather sorry that BOOBOO and POOPOO are developing together, because I don't want her to derive some deep Freudian confusion between the two.....

In fact, the development of this pain/wound notion may be partially our fault. We are often overanxious to communicate with her in her own limited language. Thus, when she overgeneralized HOT to surprising and unpleasant feelings or tastes, I've used HOT as a word to warn her away from a few things that might be dangerous in some way other than temperature (e.g. electric outlets). Similarly, now that she seems to have the concept of BOOBOO, we've also used it for serious warnings (e.g. "No, Julia, the stove is HOT; it makes a bad BOOBOO.")

BOOBOO has also participated in a few sentences, e.g. MOMMY BOOBOO in the above mole example.

Yesterday George pulled out an odd device he had bought at the hardware store, a long wire-pointer thing with a claw at the far end that can be manipulated through a spring at the top. Its primary use is to retrieve small objects from out-of-the-way spots, e.g. behind a refrigerator. He and Julia had constructed a tower encasing small animals, about 30 inches high (which, miraculously, J left standing for days). He used this device to reach in gently and "rescue" a Fischer-Price doggie imprisoned inside. Today Julia saw this device in the bathroom and immediately said GAGA. She ran out in the living room and got her FP dog, brought it back in to George and demanded a repetition of yesterday's retrieval game—this time from the bottom of the bathtub.

George and Julia just came back from the park, where they had gone to the zoo and ridden the train. While viewing the komodo dragon—a most lethargic and uninteresting animal—Julia kept demanding that the dragon become more active and entertaining, yelling UP! over and over, to the amusement of the crowd. Meanwhile, when she came in the door she immediately tried to tell me about her train ride, pointing vaguely and saying CHOOCHOO.

9/8/84. There are several more examples in the last few days of apparent long-term memory. Twice when I drove her into an unfamiliar large parking lot, she said "Sheeshee" (which now quite clearly means HORSIE). I think that means she thought we were going to Seaport Village to the carousel. A couple of days ago, we drove into the parking lot at Salk (which looks quite different). This time she kept saying POOL over and over, so I think she believed we were driving to the same pool where Cindy often takes her. Last night we actually did go to Seaport Village. Again, she said SHEESHEE as soon as we hit the lot, and began asking for ICE (which also means ice cream) when we got out of the car (we often do go there for ice cream). Finally, while she and George took a walk around the area, she started saying her word for SWING (something like SWIH). He had no idea what she was talking about until she led him to a swing

and hammock shop with a large swing outside. I had taken her there and sat in that swing at least three weeks ago.

At the zoo this morning Julia saw two flamingoes fighting, and began yelling BOOBOO; then, in an apparent effort to quiet them down, she said TADOO (gentle/careful/love) over and over.

9/9/84. The boobo concept continues to grow in its generality and range of application. She definitely says it whenever she hurts herself, and points to the place that hurts if you ask (including her newly emerging and probably quite painful eye-teeth). ANY flaw on our bodies is subject to a BOOBOO comment, often with considerable concern on her part. Also, body parts that aren't quite as firmly established in her repertoire (e.g. nipples, eyebrows) sometimes get called BOOBOO.

The intellectual (but not physical) conquest of PEE and POO also continues. On her new baby toilet, she will often sit proudly (in her diaper), saying PEE and going through bits of the toilet ritual. George let her run about without a diaper on a hot afternoon this week. She came to get him saying POOPOO with great concern, and dragged him to see what was in fact a small puddle of urine (fortunately not on the rug....). This suggests that she does not have these body functions straight. She will also pull at her own diaper and use one of these words (usually the latter) to indicate her discomfort.

She has taken to playing with MOMMYDADA in rapid combinations, in alternative orders, with more and more accidental—or perhaps now intentional—blends like DAMMY, MADADA. Some new successive single-word utterances (henceforth SSWU) include: BABA... SHOE, and sundry combinations with BOOBOO. HAPPY BABY is a clear sentence with differential stress on the two words. A couple of new (or renewed) lexical items include TRASH, LION and OPEN (pronounced appuh, like APPLE).

9/10/84. Julia now says BEEBEE rather than BABA for dolls and infants, almost all the time. Also, she switched yesterday from GAGA to GAHGEE for dogs (toy and real), although she backslid once into GAGA this morning.

Re long-term memory, this morning in bed George asked Julia if she remembered going to the aquarium yesterday to see the big fish. She immediately said TOODOO, and George replied "Yeah, we saw a turtle there too." Then I asked her about going to the beach near the aquarium, to play in the sand and the water. After hearing the word SAND, Julia said POOL. There are two ways to interpret that. On the one hand, she has said POOL a couple of times in connection with the ocean (the confusion between the two must come from the Kansas blood in her veins), so what might be what she meant in this instance. On the other hand, after they got home from the beach yesterday, George washed the sand off her in the backyard pool. In either case, she was clearly remembering an old event and carrying on a conversation about it.

9/11/84. There is growing evidence that Julia is becoming jealous of Cindy's baby Ben—accompanying a general shift toward the willfulness and negativism that (they tell us) characterizes the terrible two's (a little early in this case). Her aggression is sometimes literal, in grabbing toys from him. More often, it is sneaky: 'accidentally' stepping on him, patting him gently and then accelerating the pat to something more and

more like a slap, “giving” him toys with more than the necessary force. We’ve tried some punishment and coercion of a mild sort. Yesterday, however, George had a long and repetitive conversation with her about not giving boobos to babies, and being gentle. (Her word TADOO is converging more and more onto the word GENTLE, with a pronunciation something like JEHDOO.) Whether it will have an effect, of course, we don’t know; but Julia was definitely quite struck by this discourse on George’s part. Into the evening yesterday, and again this morning, she seemed to be mulling the thing over, repeating various orderings of the words BEE-BEE...JEHDOO.....BOO-BOO....BEEBEE BOOBOO...JEHDOO... BOOBOO.

9/13/84. As of today, the great mulling over of the gentle/baby/booboo discourse is still going on; but unfortunately so is the aggression. She was mean enough to Ben today that, with our full permission, Cindy had to spank her hand. Later, when Jared tried to pick Ben up, Julia ran over and yelled at Jared scoldingly (what’s sauce for the goose...).

On an especially hot day a couple of days ago, George and Julia took a cool bubble bath together. He was soaping up hair and beard and said to Julia “Daddy’s washing his beard; you wash your beard too, okay?” and she started soaping up her own chin. Since this was clearly the first time she has been accused of having a beard, this seems to be reasoning by analogy.

It is clear that she has the meaning of the verb OPEN, to make various things open or accessible, but it is pronounced APPUH like APPLE, so we missed it for a while.

9/14/84. Julia seems to be trying to work the (my) mid-western “r” into her pronunciation of CAR, producing something like CAH-RWRWRW. But it is clear that phonological change is an internally driven process, i.e. something she’ll do only when she is ready. Last night I challenged her recent pronunciation of HORSIE as SHEESHEE, by repeatedly saying HORRRRRRSIE back to her. After repeating SHEESHEE back to me about 10 times, she finally tried a compromise: HAHSHEESHEE.

Two days ago while we were all in bed in the morning, Julia took her doll’s hand carefully and used it several times to stroke my breast, saying JEHDOO over and over. This is the first example I’m aware of in which she acted through a second agent (as opposed to putting dolls in the passive role in caretaking, or having them act out such intransitive actions as sitting up on something or dancing/walking/rolling/riding).

Julia is starting to pay considerable attention to television, naming things she sees on there (keep in mind ours is a rather small and faded black-and-white TV), and insisting that babies or doggies or horsies who have disappeared come back. She noticed an airplane in the backdrop of a news telecast yesterday, even though little was visible except the windows (i.e. you couldn’t see wings, wheels, or the nose of the plane), and went to get her Fischer-Price airplane to compare it. Also, yesterday morning George put on some cartoons—the usual aggressive slapstick stuff. To my delight, she hated them, calling out BOOBOO over and over, and coming to the other room to tell me about the BOOBOOS with a worried expression on her face. We turned them off.

We are starting to audio-record Julia now and then, with the external mike we bought for our stereo. So far we have very

little on tape except the ubiquitous demands for CAR, UP, etc. J seems to regard the mike as a kind of telephone, putting it to her ear.

A couple more sentences: BIG GAGGEE/CAH (I think, although it isn’t crystal clear), MY SHOES.

9/16/84. More sentences as of today: MY BABA and BIG BABA (the latter said while pointing to my breast after comparing it with her plastic bottle!). Also, she has starting inserting hard Rs into various aspects of her speech since conquering it within CAR. This morning she pointed to George’s sandals and said SHOES ARE DADA. Also, she has been varying her pronunciation of BABY with BABIES—although I can’t tell if a singular/plural contrast is intended. The association of PEAS with food in general was made clear last night, while she was happily playing with her ice cream and talked to it saying HI PEAS. This morning I said something about SHOULD I GO MAKE BREAKFAST? and she quickly answered PEAS. George thinks it might be an amalgam of PEAS, PLEASE, and PIECE (as in “Do you want a piece?”, a frequent question in food contexts). She makes a lot of multiword sentences by hooking a vocative to a single-word utterance, e.g. UP, DADA (where the intonation on DADA clearly suggests that this is calling him by name rather than describing him as the agent of UP).

UP is beginning to replace the old ABBIDABA (which has all but disappeared except for some backseat babbling) and the more recent I DO DAH as an accompaniment to Julia’s own body movements (e.g. climbing stairs), as well as a request to get up, down, or out. Occasionally, however, she does ask directly for OUT. Also, she has been saying OUTSIDE.

The word WADOO for WATER is now suddenly showing up as WAWA. She will ask individually for JUICE, WAWA and something that sounds like an effort at MILK. The word APPUH has now come to be used for OPEN, APPLE (or any similar fruit), and AIRPLANE; her efforts to say ELEPHANT sound suspiciously similar as well. So, again, she seems to be reorganizing her vocabulary along phonological lines.

In her Mister Brown book, there is a page where Mr. Brown is knocking on a door. Julia will open the book to that page on her own, and knock on the door herself saying NAH NAH NAH (knock, knock, knock).

I’ve tried a lot of unusual sentence commands out on her lately, like BRUSH THE BOOK and KISS THE AIRPLANE. She seems to have gotten very good at it now.

I have the feeling that a lot more words are coming in, so that I am starting to lose track. George frequently says “There was another new one today, but I’ve forgotten what it was.”

9/18/84. Julia seems to be experimenting with the word WATER: formerly WADOO, evolved into WAWA, today it came out several times as AWA, as though she were aiming at the Italian translation AQUA!

Another example of acting through her doll occurred in the shopping center, when she picked up her doll’s hand and used it to wave at a little boy who was coming over to say hello.

New words today that I didn’t know she knew: DRESS (DASS) while pointing to new dresses hanging in a closet that is usually closed, and DIRT (DUHT) while watching an elephant spray itself with dirt with its trunk. She also seemed to try to

imitate the word TRUNK (TURK). PEOPLE (PUHPUH) is her new word for little Fischer-Price people, formerly called babies.

KITTY (KIKKI) made its debut two nights ago while we were coloring a small brown kitty in a coloring book. There was also a HORSIE (SHEESHEE) on the page, and a lion that she alternatively called KIKKI, GAHGEE and something that might have been an effort at LION. The next morning when she climbed into bed with us she started talking about KIKKI. I wasn't sure if this referred to the night before, until she began listing the other animals on the page too. This tendency to converse about the past showed up in a couple of these other examples as well. When George told me about the DIRT example, I made a point of asking Julia later "WHAT WAS THE ELEPHANT DOING?" Without hesitation, she answered DIRT. Also, in the same zoo visit she and George had been watching birds eat sundry scraps; the only thing they had to feed the birds was the remaining piece of her ice cream cone. George had asked "SHALL WE GIVE HER THIS PIECE?" She answered PIECE, and they fed the remaining bit to the bird. Later he was telling me about feeding the bird, not having mentioned the word PIECE in his description, and Julia added the comment PIECE as though she had recognized this recount of the past and wanted to add her memories too.

KEY/KEYS are very frequent right now, as is 'KAY (in the intonation appropriate to OKAY). Interesting that this K cluster accompanies the entry of KITTY. She will, by the way, point to doorknobs and keyholes and request KEYS as a way of getting in or out of doors.

Some new sentences: HI BABY....MY BABY (in that sequence last night), and BIG BABY. Also, BIG BABA (said while pointing to the larger of two baby bottles, and in requests for that bottle later in the evening and the next morning). BABY FISH was said while pointing at a small fish in a pond at the park this weekend. She also, several times, insisted that a gorilla at the zoo was a BIG BEAR.

There is more and more evidence that Julia is trying to place function words in their proper slots, though the efforts are only rarely intelligible: DERE XXX, ITSA XXX, and AH XXXX.

At the lab today Julia was insisting that Barbara give her each and every ball-like object in her office, including a white plastic egg. As an experiment, I took the egg in my left hand and one of the balls in my right and asked "WHERE'S THE EGG." Julia hesitated and then reached appropriately for the plastic egg. Ever the skeptic, Beverly put two balls in my hands and said "NOW ASK AGAIN." I did, Julia looked for a moment, and then said BAH...BAH pointing to each of the balls in sequence. Later, when she wasn't paying attention to either item, I said GET YOUR EGG AND PUT IT IN THE ICE. She looked around, got the egg, and placed it in the glass of ice water, saying GEGG.

She also seems to be trying out more new proper names. After I first said "WE'RE GOING TO SEE BARBARA" she said BABA, and later modified that (several times) to BAWAH. When we were pulling out of the parking lot in the car, she pointed vaguely out the window and said BYEBYE BAWAH. Later she was playing with Elaine's teenage daughter Nicole. When we left I said "SAY GOODBYE TO NICOLE" and Julia answered GOGOAL.

We sing together in the car now, in syncopated harmony. Also, drawing is improving apace. She understands the drawing game and names a body part or two as I place them. Today, perhaps by accident, she drew her first closed form on the blackboard at school (as opposed to scribbled streaks).

9/22/84. More proper names: CINDY (SINNY), and her new idol Cindy's daughter HEIDI (HI-EEE). Also, she's trying more verbs. Yesterday morning I had (ahem) brought George breakfast in bed; Julia climbed up and watched him cutting into his waffle, and asked for the knife. He said "What do you want that for?", and she began making back-and-forth movements of cutting with a knife and fork, saying CUT. Later in the evening they were out in the kitchen making dinner, and, Julia said COOK. When he asked her later in front of me "WHAT DID WE DO, DID WE MAKE DINNER?", she answered COOK again. Another new word: TEETEE (meaning TV).

George escaped a mosquito last night by leaving me to go sleep in the bed outside Julia's room, so he lay there hearing her crib speech for the first clear time this morning. He reports built-up sequences including GO...GO....GO BYE and PIECE....PIECE....MY PIECE.

It is possible now, with ample prompting, to hold regular conversations with Julia about how her day went. They are still mostly single-word utterances, and often she picks up on a word in my question, e.g. "WHAT DID YOU AND SARAH DO? DID YOU PLAY BALL?" answered by BALL! Other times, though, with the same look of recognition and sound of excitement she will answer my question with a related word that I hadn't said, e.g. DID YOU PLAY DOLLS? answered by BABY!

9/24/84. More sentences: BABY SHOE, and then upon leaving my car but noticing George's: DADDY CAR...CAR MOMMY. More verbs: SING (followed by a most pleasant and melodic illustration thereof) and STUCK. New nouns: TUNK (TRUNK, re elephants), and something like TEETH. She climbed into a cardboard box yesterday and said something very like BOX. She has a word for bicycles, tricycles and motorcycles which is something like SHIKAH, but I'd like to hear that one a few more times. Also, this morning without prompting she volunteered a whole discourse about yesterday's treats: TOO-DOO....CHOO-CHOO....SEESSEE (horsie).... GAGEE (doggie), all vis-a-vis the zoo, merry-go-round and train. She also imitated the open mouth with tongue movement that the giant tortoise had made yesterday (with her imitating it on the spot). Interesting that she seems more likely to do immediate imitations of animals, and machines (BEEBEEBEE for the microwave, VVV for a motorcycle) than humans!

I've noticed that she has almost completely switched from DADA to DADDY (making a matched set with BABY/MOMMY/DADDY). Still no sign of a name for herself.

She woke up with nightmares twice this weekend, once talking and crying repeatedly about BEE, and BEE BITE. She had been quite startled by a scene in the park in which a man had been frightened by a bee, and had then killed it with his sandal. That may have inspired the nightmare. On the other hand, she also kept scratching as she said it, and since we've had another brief plague of mosquitoes, it is possible that a Real

Live and Biting Mosquito woke her up, and the link with BEE was forged.

UP and DOWN now seem to be used contrastively some of the time, although this morning she forgot again and asked to get down on the floor from my arms by saying UP.

9/25/84. Yesterday we were in the back yard, and I noticed that her wading pool was still filled with old water. When she asked to get down, I said "No, wait, it's full of yucky water. Daddy's going to pour it out." Right after George pulled it across the lawn and dumped it out, Julia said YUCKY G.... POOL." There was a pause between the second and third word, but the whole sequence fell under a single-sentence intonation contour, with peak stress on the second word and markedly falling stress on the third. Another pair of sentences this morning: DIRTY SHOE, and DIRTY BABY....SHOE, both said while tugging at her own and the doll's booties (her own were indeed all black from running around, though the doll's were still quite pristine). She also said HAHT (for HEART, referring to the red heart magnets that hang on the refrigerator on those rare instances when she lets them), and the clearest rendition I've ever heard of BOOK, with a very emphatic "k" on the end. Interesting that this is in the same period in which she has been stressing the end consonant in DUCK, and working hard on k-initial words like KITTY (KIKI) and KEY, as well as a new rendition of COOKIE (also pronounced KEEKEE).

9/26/84. Cindy reports that Julia said BRING BABY and HOLD today. Two new verbs! I also forgot that she has been saying OWL pretty reliably, to owls in books and to the owl cage in the zoo (before we've even quite gotten to it), plus she says something like HOOHOO in connection therewith. Other new sound effects include a greater variety of motor noises with sundry vehicles.

9/27/84. A sentence festival this morning: CAR KEY (holding my keys while standing at the door and nagging to go out), BABY DANCE (after music and dancing started on TV, she went and found her doll and dragged it over holding it by the hair to make it dance up and down, and a whole series around cookie eating that included MOMMY G(MMAH) COOKIE (which was addressed to her father after I gave her a graham cracker, and seemed to mean MOMMY GIMME COOKIE, followed by MOMMY COOKIE (in trying to get me to eat a leftover bite), DADDY COOKIE (when I had unceremoniously dumped a handful of cookie crumbs into George's hand), BABY BABA (while going off to the kitchen in search of her bottle—does this mean that she is obliquely referring to herself as BABY?).

In fact, although I have definitely forgotten some, in this morning's festival about 30% of Julia's utterances were multiword, not counting repeated calling for me or George by name. So, by eyeball estimate, I think I can officially pronounce Julia in Stage I of first word combinations. Which is as good as place as any to end a chapter.....

## JULIANOTES 5

Julia is now 18 months and 5 days old. Hard to believe that I'm into the fifth chapter. I ended the last one pronouncing Julia 'in' Stage I of word combinations. This morning did nothing to contradict that decision; I've lost track of all the combinations and will probably end up recording only the more interesting ones, and the fledgling uses of morphology.

An interesting lexical note: yesterday morning George put a new little Tshirt on Julia which apparently scratched or itched around the collar. She kept pulling at it complaining BEE, BEE. So apparently she has derived from various warnings about bees biting, and her apparent conflation of bees and mosquitoes, a general principle by which BEE means ITCH/STING. (She also now claims BEE with the apparent purpose of getting her back scratched; like mother, like daughter).

9/29/84. George thinks that he has deciphered the long AH particle that Julia occasionally puts in front of nouns, e.g. BABY.....AH BABY. Apparently she uses it contrastively to mean something like OTHER BABY or ANOTHER BABY.

Just today Julia seems to have learned the word AGAIN, requesting that Grandma rewind the music box. We'll see whether we see more of it soon. She has also started saying MY, most decisively, with and without a corresponding noun.

10/3/84. At least three new verbs used spontaneously and appropriately: TAKE, PUSH and PULL (although the latter two are pronounced so similarly that they might actually be one bidirectional verb PUH). I also think she may be using the adjective PRETTY (pronounced PREE). She continues to use BIG (pronounced BIH), but I'm getting confused about what it means. It was originally used contrastively to indicate size, but now appears in contexts that I frankly can't decipher. PLEASE is now offered on request, as in PEAS DADDY BABA (three connected words, with no pauses in between, after asking for a bottle and being told to say "please").

Now that Grandma is here visiting, Julia appears to be warming up to her more and more. Several times now she has addressed Grandma as GAGA. Meanwhile, dogs (which were formerly called GAGA) are sometimes called GOGGIE and sometimes called DOGGIE.

Yesterday morning Grandma put two barrettes in Julia's hair, as per J's own request: a doggie barrette and a barrette with two kittens on it. Because she has a cold, we skipped washing her hair in the bath last night, and she ended up wearing the same barrettes to bed. This morning she reached up to her hair, felt it, and said GOGGIE.... KIKKI. So either she has developed incredible tactile abilities, or she remembered which barrettes were put in her hair 24 hours earlier (there are at least a dozen animals that it could have been, among her set of barrettes).

George has been spending hours admiring his new Roman coins, which has sparked an avid interest on Julia's part. In fact, to his serious concern, she has gotten so interested in his coins that she'll spot the box across the room and demand it, saying DADDY. To divert her, he has plied her with pennies, some of them in the little plastic envelopes he uses for his coins. But she seemed to have noted that pennies weren't quite the same. So he found an old Italian telephone token, quite similar in some respects to a rugged old bronze coin, and gave it to her in a folder. She noticed the minuscule and barely recognizable en-

graving of a telephone on one side, pointing. George said "What's that?" and she immediately put her hand to her ear in the telephone gesture that we haven't seen for months.

Last night Julia was climbing all over George and jumping around playing horsie. She announced to me DADDY 'SEE (DADDY HORSIE).

10/4/84. This morning Julia requested syrup for her French toast saying with remarkable clarity SYRUP PEAS (syrup please). More and more words like this are showing up, for the first time, but unfortunately we're not writing them all down fast enough.

10/6/84. We were breakfasting on the patio yesterday, and I got up and went inside to shower. Julia called out to me, then saw me behind the screen and said SIDE! SIDE! (which now means both inside and outside). I came back outside, but stood there on the step. She then said DOWN! DOWN! I stepped down, only to be told CHAIR! CHAIR! Finally I sat back down where I was and she was satisfied. I felt like a stewardess flying the plane in with instructions from ground control.

STUCK has now been used meaningfully, several times. She also asked for her bottle with PEAS BABA last night, and said DANKYOU when she got it. At the zoo, she requested a piece of apple with the full sentence PIECE O'APPLE PEAS DADDY. She also asked to be lifted up to walk on a low stone wall with PEAS UP, and said DANKYOU when lifted.

After a full day at the zoo yesterday, J has been telling us about bits and pieces of it ever since. The apes had been making a huge racket, which she recounted to George by saying BAHN-KEY and then making a clearly imitative screaming sound. If you ask her what the monkeys did, or who was noisy, she gives the same little imitative screech. She also, of course, talks about the horsies and turtles, as usual. George asked her who pulled the cart (referring to the visiting horse team show they had seen). She ignored the question, but when she heard the word HORSE a few minutes later, she said SEESSEE PULL CART.

This morning, she was talking about babies and I asked her WHO'S A BABY? She seemed to respond quite clearly I BABY. Both Grandma and Cindy say that they have heard her refer to herself as JULIA, and name objects belonging to herself as JULIA XXX. This is certainly possible, following our six hours of babysitting Becky, who labels all objects and people in the environment by possessor (e.g. JULIA'S DOOR looking out the door of our house). But I must say that I haven't heard Julia's name out of Julia yet.

In the bath last night, she was playing at swimming (on her stomach, floating with daddy's help) and making her babies swim. She said SWIMMING several times.

This evening we were walking around Seaport Village with our visiting babysittee Becky. Julia was insisting upon pushing Becky around in the stroller. As our party approached a fountain, I heard Julia pronounce importantly "DIS IH AWA, BECKY" (THIS IS WATER, BECKY). Earlier, as we stood on the dock, Julia also named BOAT and BICYCLE rather clearly.

10/09/84. Julia is clearly using the word PENNY now, sometimes PENNIES (I can't tell if it is intended to be contrastive). However, she has a very hard time with the N in the middle, so it comes out more like PEH EEE. Her prior fascination with shoes had led me to think she'll grow up to be a

podiatrist; now I think she's destined to be a banker, so avid is her interest in coins. She asked me to open her coin purse this morning (it closes by a zipper that she can't manipulate), so she could put a penny in. After it was in, she handed me the open purse and again said OPUH. I think, then, that OPEN means both open and close. This makes it seem even more plausible that her PUSH/PULL set, which sound so similar, are also in fact one bipolar verb.

We had a great drama last night trying to get Julia into pajamas. Finally George pulled out some Superman pajamas, hand-me-downs from a friend, and made a great ceremony of showing Julia both Superman and Supergirl (in a comic he had bought just to introduce the notion of superwomanhood to Julia...). He pointed out the S on the shirt with great solemnity. This morning Julia padded about the house in the new pajamas, and pointed to the S on her shirt proudly announcing "S".

I washed one of her cloth dolls this weekend, and one of the round felt eyes came unglued. I hoped she wouldn't notice until I could get it fixed, but she did, pointing to the empty eye spot and crying EYE with great concern. So, to appease her, I found the eye and gave it to George to repair while I was making dinner. As George struggled to sew the eye on (reasoning, quite reasonably, the Julia wouldn't wait until glue dried), she stood by his side crying and pointing. I think she was honestly afraid, as she saw the needle going in and out, that we were hurting the doll. She relaxed when it was over and we declared the doll both fixed and happy, but continued now and then to finger the stitches with some concern.

Julia is collecting proper names at an extraordinary rate, although Cindy's two daughters (Heidi and Sara) are still both called HEIDI (pronounced HI EEE). Sometimes she leans into me, thinking and hugging, and starts to recite the names of everyone she knows and cares about.

On the way home in the car tonight, playing with her plastic car keys, Julia was asked (on the basis of a certain amount of olfactory evidence) if she had a poopy diaper. She answered with a multiword combination that I cannot interpret for the life of me: KEY POOPOO)!! Perhaps it was a joke?

Tonight she asked repeatedly for a juice bottle (JUICE BABA), and was given the last remaining bit of apple juice. When she asked for more, alas we could not oblige. She started asking for JUICE APPLE over and over. I repeated that to George, and she switched to APPLE JUICE over and over.

When I abruptly removed Julia from climbing on a table, she said to me for the first (but probably not the last) time BAD MOMMY. Later on Daddy got the same treatment. At least she is an equal-opportunity insulter.

10/10/84. A nice combination this morning: PENNY POCKET, on planning to put pennies in her pocket as soon as her pants were on.

Julia is now saying HORSIE instead of SEESSEE. I knew it was coming a few days ago when I heard her practicing: HOOOH-see, OW-see, etc.

She now says MUCKY in a variety of contexts including dirty hands, a bottle of juice that didn't taste good, and an old milk bottle that we had forgotten on the living room floor since morning (thank God she had the sense to give it to us saying MUCKY BABA, instead of drinking it), a very blackened pen-

ny, and sundry greasy and messy surfaces. She will also occasionally alternate between MUCKY and BLAH, though so far I think MUCKY is the only one that appears in combinations. However, she also tries to say DIRTY, more often to dusty/dirty surfaces than sticky ones. YUMMY is now used regularly when she is eating something she really likes, sometimes in conjunction with MMMMM (e.g. YUMMY, MMMMM).

I've noticed more and more use of something like a questioning contour, often on sentences ending with a vocative, particularly in requests (e.g. PENNY DADDY?).

10/13/84. Some new sentences in the last few days, including some with new verbs and adjectives in them, include SHINY PENNY, DADDY GET CAR, MOMMY PUT SHOES and MOMMY CARRY. MORE is now used regularly (also in sentences), but seems to be pronounced BOH. The AH XXXX that George had interpreted as OTHER is still around, but she also says OTHER XXX fairly clearly now in much the same contexts.

She tries to say WET, pronounced BATCH, in a variety of contexts. In fact, the other morning she was apparently trying to tell us that her water bottle was leaking onto the bed sheets. She kept pointing and saying BATCH BATCH as we failed to understand, until she finally had the good sense to paraphrase her own comment by pointing to the spot and saying AWA (WATER). She has also alternated between WET and WATER in other contexts, such as pointing to my wet hair when I emerged from the shower. MILK is now used regularly, pronounced BILK. DRINK also occurs, pronounced DEEK.

When friend Judith was visiting a couple of evenings ago, Julia picked up a nickel and proudly announced PENNY. Judith corrected her saying NICKEL. Julia responded by saying COCO, which is, interestingly, her pronunciation of PICKLE. The next day she spontaneously named a nickel as COCO. Since then she has also picked up the contrasting word DIME, and made a stab at QUARTER (clearly her numismatic collection is increasing in size and value along with her vocabulary).

Follow-up on the superman shirt: Julia has requested the shirt several times now, asking for S, without having seen or heard of it from us all day. She also responded to Superman on TV by naming him S.

It is hard to keep up with all the new nouns, but a couple that I can remember include PIE, PILLOW and BEADS. Today we went through her barrettes (which she also now pronounces BETT, having giving up on the confusion with TURTLE). She successfully named all of them except the rabbit: ELEPHANT (pronounced in varying amusing ways like HAPPUBUH), KITTY, DOGGIE, BEE (alternating between BEE and BUBBABEE for BUMBLEBEE), BEAR, DUCK and (I think) BIRD.

The other day we were taking my car to the mechanic, and I mentioned that we were taking the car in TO FIX ITS BOO-BOO. She was very struck by this, saying BOOBOO CAR over and over. That afternoon, when we picked it up, she started saying BOOBOO CAR without prompting when we pulled up in front of the shop. I assured her that the car was okay now, and was happy, so she started saying HAPPY CAR. She repeated both BOOBOO CAR and HAPPY CAR over and over on the way home, as if she were trying to work it all out.

Julia is doing more and more play with dolls in which she makes the dolls move in various ways: dancing, swimming (with FP people that she has been calling CINDY and HEIDI), hiding behind pillows. At the same time, she has begun talking to her dolls quite a bit, saying HI BABY, HI BABYDAH, HI TURTLE, etc., and then launching into long discourses. In the car this morning we passed the formation of a Columbus Day parade downtown, complete with horses. Later, when the horses were no longer in view, Julia was holding her doll up and looking out the window, explaining HORSIE, BABY.

Julia has gotten quite insistent about communicating lately, and tries various gestural and verbal alternatives when the original message fails: insisting UP and dragging one of us off to find the desired object, paraphrasing within her limited vocabulary, pointing from different angles. Yesterday morning we were out of milk, and had tried to pass off a water bottle on her until breakfast could be fixed. She was quite unhappy about this, threw the unwanted AWA BABA away, and kept insisting that George make another bottle (also saying BICK'BICK). Since he didn't seem to be cooperating, Julia decided that he needed to be shown how to make a bottle: She went over to the drawer where the bottles and nipples are kept, insisted he open it, then pulled out a bottle and a nipple and starting placing the nipple on top and screwing it on while George watched. Then she handed it to him and waited (alas in vain).

We've noticed a new level of confusion over identities since Grandma was here. Perhaps because George had been referring to his mother as MOM, and had also told Julia THIS IS MY MOMMY and THIS IS DADDY'S MOMMY (surely a rather difficult concept at this point...), Julia occasionally referred to Grandma as MOMMY as well as GAGA. In the same few days, she went back once again to calling Cindy Mommy off and on. To compound things, she called me CINDY a few times. She has also been more affectionate with me than usual, and cries out for me more when I am gone, as though she has hit a phase of insecurity and uncertainty.

Battles over dressing are getting more and more common: sometimes she refuses to put things on, sometimes to take things off, sometimes she shows strong opinions about which of several items she will wear, often she insists on trying to put them on or take them off herself, occasionally she insists that WE put them on our own bodies (until it is made clear to her that there is a dimension of size that can't be bent). We're trying numerous tricks to interest her in clothes, or persuade her of the great beauty or interest of any given item. It is getting harder and harder, and we're running out of ideas .... Clearly this is a place where Julia has decided to make her stand. She also delights in wearing our things about the house, particularly shoes, which she will label appropriately as MOMMY SHOES, DADDY SHOES, GAGA SHOES, etc. while she struts about in them (or whatever facsimile of strutting you can do wearing a men's size 14 when you wear an infant's size 6....).

It seems to me that Julia is spending some time analyzing and contemplating word order. I can often hear her juxtaposing a two-word utterance in both orders, back and forth, as though she were considering the effect. In fact, I've been trying to figure out if any of her combinations are obligatory in ordering, and couldn't with any confidence nominate any. Statistically, how-

ever, adjectives seem more likely to come in first position. The schwa-like forms that occur in article position from time to time might be candidates for obligatory ordering, but it is too soon to say. I thought the alternation between JUICE APPLE and APPLE JUICE the other day was an interesting case in point, since JUICE APPLE simply does not occur in her input. On the other hand, there might be some meaning that underlies alternations in ordering. For example, a person's name used to indicate ownership seems to occur in first position most of the time: MOMMY CAR, DADDY CAR. But this morning, when we got into the car (not going to the babysitter's, since this is Saturday) she said CAR CINDY, which I take to mean something like GOING TO THE CAR TO SEE CINDY.

She also seems to be doing far more imitating than she ever did before, trying to repeat whole phrases or pieces of phrases addressed to her. But I'm not sure whether it is truly imitative, or a recast filtered through her system quite carefully. For example, yesterday I said to George (in a tone of voice explicitly not intended for Julia) "There's an old bottle in the back of the car that we should get rid of." A moment or so later, without having seen the bottle, she said BABA CAR. In any case, given how assiduously she has avoided immediate imitation to these many months, I find it interesting that so much more of it is showing up now. Since we are in a clear burst of vocabulary learning, perhaps it is not surprising. She used to take everything in and then work on it later, on her own. Now she is taking so much in that she seems to be forced to do more analysis 'on line'.

The word OPEN is very common now, as a request for making things accessible in a variety of ways, e.g. asking us to take off her shoes (OPUH SHOE, DADDY). GO is a frequent word, but its meaning is uncertain. Sometimes it seems to overlap with OPEN, in the broad sense of MAKE SOMETHING HAPPEN. During a little tantrum the other day, after being told NO about something or other, Julia stood in the living room with her back to us and repeatedly cried GO... GO!! A few times she seems to have tried to say CLOSE appropriately, but it could be one of those somewhat delayed imitations that are now getting much more frequent.

It's now later in the same day. In the car coming back from Seaport Village, Julia blew my notion of ordering constraints on possessives out of the window: as soon as we drove up in front of our house, she saw her father's car and said CAR DADDY, several times. After that, George said "YEAH, AND DADDY'S CAR IS BROKEN TOO" to which Julia immediately replied BOOBOO CAR.

I forgot to mention that, in the last week or so, she seems to be using TWO contrastively, to mean two or more of something: TWO PENNY(S) (where the presence of an "s" is uncertain), TWO BABY, etc.

Last night when Judith was playing a game of hide-the-dolly with Julia, Julia suddenly said TURTLE. We were both perplexed, since there was no turtle in view and Julia didn't seem to be on her way to get one either. It occurred to me that this appearance/disappearance game with the doll reminded J of the soft stuffed turtle that Grandma gave her, a Mommy Turtle that unzips to reveal three soft furry baby turtles that Julia loves to take out and put back in.

She has started naming our neighbors across the street, WALLY and ROY, except that she seems to have found a way to pronounce them both the same way: WOWWY. I had a hard time keeping the two of them separate myself when we first moved in, so I think that's a brilliant solution.

Tonight in the car I heard her say JULIA, quite clearly, for the first time. I had been saying WE'RE ALMOST HOME (she said both HOME and HOUSE, though it's not the first time for either), and I had then said MOMMY'S HOUSE, DADDY'S HOUSE and JULIA'S HOUSE. That precipitated the Grand Self-Naming.

10/16/84. This morning George finally got her to put the "n" in PENNY, and they proudly came to show it off. Almost immediately, however, Julia frustrated George by showing off her penny and saying the following things, several times each: PENNY (perhaps derived from CINDY), CANNY (from CANDY, which to my knowledge she has never said but might know?), and SENNY (maybe also from CINDY?).

Yesterday George had taken Julia to a bookstore, where she had thrown a fit when he had to take some books from a shelf on car buying and car repair out of her hands, so they could leave. Tonight we pulled into the parking lot of the same shopping center, still pretty far from the bookstore, and Julia started saying BOOK BOOK, and then turned to me and said BOOK CAR.

Re the ordering issue, tonight she said MY SHOE and SHOE MY, in close juxtaposition.

J seems to have developed both an interest in and an attachment to two-dimensional images of various kinds: Tonight, for example, we took a polaroid shot of her, on her rocking horse. As she saw it, she seemed to name herself (sounding more like DOODAH). Then she took it over to show the horse, pointing and saying SEE, and then put it on the horse's back and gave it a ride, singing and smiling. A still more poignant example came this weekend. At breakfast George had drawn her a picture of a turtle. She had insisted we take the picture with us, put it in the seat of her stroller, rode it around saying TURTLE and talking to it, took it into the car, and then insisted on carrying it when we arrived at the zoo (where she started saying TURTLE right away, in this case demanding to be taken to her favorite exhibit). On the way, she showed the turtle picture, pointing and looking back and forth, to several animals including the Komodo dragon. When we at last got to the turtles, she showed her picture proudly saying SEE, TURTLE, and tried to touch it to the giant tortoise's back. Alas, it dropped out of her hands and into a puddle of water between the giant tortoises, thus contaminated by substances I'd rather not think about. She was terribly upset and kept asking for the MOMMY TURTLE (as she had come to call her picture, which was in fact of a mommy turtle with her babies). We tried to convince her that now the turtle could play with its friends, was happy, etc. but, she was miserable. She kept coming back to the theme hours later, and the next day as well, with tears in her eyes.

New body parts named: KNEE, HAND, ARM, TOE, FOOT.

More confusion over her caretakers' identities. In particular, she still occasionally calls me CINDY and Cindy MOMMY.

This took a baroque turn in the car this evening, when she kept saying MOMMY CINDY, DADDY CINDY, HEIDI CINDY, and even JULIA CINDY.

10/17/84. New words this morning: PENCIL (PENCHER), BOY and COLOR (CUGUH). She had seen and demanded her crayons, asking George to CUGUH DOGGIE. Later she told me DADDY CUGUH DOGGIE. It is quite clear now, by the way, when our names are set off from the sentence as vocatives (e.g. CUGUH, DADDY or DADDY, CUGUH) and when instead our names are set into the sentence as arguments of her intended meaning (e.g. DADDY CUGUH).

She makes a very sharp pause and a drop in intonation to mark off the vocatives.

10/18/84. New words today: STRAW (TAW), BUCKLE, MOUSE, TOYS, STROLLER. PUSH was finally pronounced with a distinct SH at the end in the sentence PUSH STROLLER.

We were looking at a new book with dozens of animal pictures, at least ten to a page. One picture had sea turtles (contrasting with land turtles on the next page) mixed in with various other underwater creatures. Julia said TURTLE, but then added BET (her improved effort to pronounce WET), and reiterated BET TURTLE.

At dinner out tonight she was playing with a straw and coffee stirrer, and managed several times in a row, with great care and deliberation, to insert the coffee stirrer inside the opening of the straw. The next time I need to have a needle threaded, I'll know who to ask.

We came home to a letter from Jane, with pictures of baby John. I had merely said to Julia "LOOK AT THE BABY," but said to George "Hey, here are some new pictures of John." Julia looked and immediately said JOHN, and then kept going around saying BABY JOHN and pointing to the pictures. In two pictures John is in the process of putting a wastebasket on his head. George was making coffee in the kitchen when Julia brought the wastebasket shots out for him to see. Without really looking carefully (certainly not pointing) George asked WHAT IS BABY JOHN WEARING ON HIS HEAD? Julia answered without hesitation HAT. Hard to believe, but I think she understood that whole question. He asked her again in a while, just to be sure it wasn't a coincidence, and she answered HAT again.

10/19/84. This morning Julia woke up talking about BABY JOHN. We had a long bout of silly commands like: MAKE BABY JOHN KISS THE SHOE versus MAKE THE SHOE KISS BABY JOHN. In both cases, she pressed the shoe against John's face in the picture and made a kissing sound. I also tried SHOW THE BALLOON TO BABY JOHN versus SHOW BABY JOHN TO THE BALLOON. Those too were handled in the same way, holding John's picture up in front of the balloon. Later we got the two spontaneous sentences: SHOE CINDY HOUSE and BABY JOHN CINDY HOUSE.

I forgot to mention that, in the grocery store last weekend, she saw raspberries from far across the produce section, and yelled out BEWWY until I went over and got some. Again, another word that I didn't know she had.

We were looking at various other photographs in the album today. Julia seemed to recognize herself, saying DOODAH. She used the word GAGA with both Grandma and Grandpa, which I

don't entirely understand. In a set of pictures of her and Baby John playing by John's wading pool in Chicago, Julia got quite excited, naming the pool and the bottle and John. Just before looking at the pictures, I had asked her at great length "DO YOU REMEMBER GOING TO SEE BABY JOHN IN CHICAGO, AT JANE'S HOUSE? YOU PLAYED WITH JOHN IN HIS POOL, AND JULIA THREW JOHN'S BOTTLE IN THE WATER." She watched me fascinated, with a look of great concentration, staring, the kind of expression she often gives when she recognizes someone or something she hasn't seen in a while. I swear I think she remembered what I was talking about. Her excitement when we saw the pictures of the pool incident support that interpretation.

10/22/84. When I was about to get out of the shower the other day, Julia pulled down a towel and handed it to me. Later on, when I was dressed but had not dried my hair, she felt the hair and said WET, then pointed at the towel and said TOWAH.

At Kerry's house yesterday Julia was playing with some colored wooden blocks. Just for the hell of it, not expecting it to work, I said "GIVE ME A BLUE BLOCK." She looked carefully through the five available colors and handed me a blue one, then went through systematically getting me all the blue blocks until they were exhausted. Surprised, I then tried "GIVE ME A GREEN ONE." Again she, looked around, and picked up a green one, then went through again and got me all the green ones with a rectangular form (leaving some cylindrical green ones out). I tried RED, and she did seem to fix on the red blocks, but they were already carefully placed together within a structure she had proudly made—so I don't know if she in fact didn't know the word RED or didn't want to disturb her red set. She did hand me a yellow one, but that could have been for either reason. She also said both BLUE and GREEN during this episode. George tells me that Julia has said BLUE AWA when they were looking out over the ocean!! So maybe she really does know at least that color.

Meanwhile, her use of TWO is becoming clearer and clearer. We found her in her bedroom the other morning pointing back and forth between pictures on the sheet of single balloons and saying BOON, and pictures of pairs of balloons saying TWO BOON.

Other new words: MAN (now added to BOY, BEEBEE and GUHL—can LADY be far behind?), HAMBURGER (also pronounced HAMBER) and FRENCHFRY (pronounced POT-SYE). TOY and CANDY (CANNY) are both used quite productively now. I find TOY especially interesting, because it is a category that covers such a hugely disparate set of objects. How does she know the boundaries of TOY? Also, I've heard her say both TOY and TOYS, in what at least seems to be a correct distribution (i.e. TOYS when she is talking about a batch of them).

On our way into the car insurance office this morning, I asked Julia "ASK THE MAN IF WE COULD PLEASE HAVE SOME INSURANCE." She went in the door saying SHUNCE. The whole time while we were there, she would occasionally look around in puzzlement asking for SHUNCE. And when we left I said THANK THE MAN FOR THE INSURANCE. She looked up at him and said BYE...DANK SHUNCE. This whole anecdote really suggests to me that she knows something

new about the language game: if you hear a word you don't know, look around for the referent.

The other day Julia saw a butterfly in one of her picture books and made, for the first time in quite a while, her FAR-FALLINA butterfly gesture (with only one hand).

10/25/84. Julia uses OKAY and YEAH all the time now. One use of OKAY is to request getting out of the car (indeed I think the word first came up in that context, probably because we always say it upon pulling up to a destination and getting ready to get out).

As we drove through the park to work a couple of days ago, Julia seemed to remember not having said good-bye to George and started saying BYE BYE DADDY and throwing kisses.

The single word GUK which used to mean both DUCK and TRUCK, has divided off into what sounds for all the world like DUCK and DUCK!! But when she said BABY DUCK the other days, and George answered BABY DUCK?, she responded angrily: NO, DUCK. Finally I said BABY TRUCK and she answered YEAH.

10/27/84. Today we were about to take a visitor to the airport (Angela, who Julia insisted throughout on calling LADY—see my prediction a few days ago!). George told Julia ANGELA IS GOING ON THE AIRPLANE. Julia immediately launched into a discourse about Grandma and the airplane: GAGA .... AHPANE.... BYE.... GAGA AWAY.... and so forth.

A new verb: STAND, and also STANDEE (STANDING?), used contrastively in the same bout of play in which Julia kept standing on books, and then Julia placed her FP dolls on the books saying CINDY STAND .... STANDEE CINDY....

Julia has been referring to herself as both BABY and DOODAH lately. George drew a little sketch of a baby sitting on the fence next to the turtles at the zoo, and she pointed to the baby calling it DOODAH.

At a hamburger place yesterday Julia repeatedly used the word FRIES and GATSUP. On today's zoo visit, she volunteered the word ALLIGATOR. Also, at the seal show there were lots of sentences like SEAL AWAY, SEAL STAND and SEAL SWIM, plus sundry comments about all the fish that were going down. I got home later and she told me about the zoo visit, including arching her back and sticking her nose in the air, touching her nose and laughing to indicate a seal balancing a ball on its nose.

10/31/84. I've been away for three days at a meeting. Both mornings that I was absent Julia looked very disappointed when George got her in the morning and brought her into the bedroom. She kept saying MOMMY SEE (presumably meaning that she did not but wanted to see Mommy), and MOMMY PLEASE. He tried explaining to her that I had gone on a trip and would be back soon, and she answered MOMMY TRUCK and alternately, MOMMY IN TRUCK. This presumably referred to the University van in which I had driven off waving with other people when she and George dropped me off. When I got in the door last night she smiled and hugged me but kept saying MOMMY TRUCK (MOMMY DUCK) over and over. I answered "MOMMY'S BACK NOW; THE TRUCK IS ALLGONE." Then she started saying ALLGONE MOMMY TRUCK,

MOMMY TRUCK ALLGONE, and finally, with several repetitions BAD TRUCK... BAD MOMMY TRUCK.

This morning when I was dressing her she insisted on wearing some old booties (too small for her) which she referred to as BABY SHOE(S). One of them fell off, and she asked me to put it back on with the expression OTHER BABY SHOE ON. She also found a single pink bootie from another pair, and asked for OTHER SHOE several times with that. I explained that this was a pink shoe, different from the yellow pair, and that we only had one pink shoe now. I also pointed to her pink shirt and to the pink stripe on her pants saying "pink". After that she started quite clearly saying PINK SHOE and pointing to other pink things saying PINK.

Julia has developed a fantasy about a, particular horned turtle in the zoo which she calls the BAD TURTLE. The other day she kept pointing to her knee and saying BOOBOO (non-existent, as far as we could tell) and then produced the four-word sentence BAD TURTLE BITE KNEE. The day after that Cindy's daughter Heidi did hurt her knee, to which Julia remarked BAD TURTLE BOOBOO while pointing to Heidi's knee.

I think prevarication has begun. Julia will occasionally call POOPY from her bed in the morning when no such state exists, presumably to get us to come in (this is a word that generally does result in prompt attention). She also sometimes calls BOOBOO and BOOBOO KNEE from her bed as well, if POOPY hasn't produced the expected results.

While I was gone George and Julia were playing with her little train. J kept putting her small plastic duck on the trucks, waiting for it to be knocked over by the train, and then commenting (repeatedly) BOOM A DUCK. She also occasionally says HUGGA in requesting or offering hugs. George thinks that the A at the end of verbs is functioning as a morphological placeholder, as if she were saying SOMETHING IS SUPPOSED TO GO IN THIS SPOT AFTER THE VERB. Actually that is not unlikely, since variations in morphology have begun: singular/plural contrasts (TOY versus TOYS, and several similar examples), possessive contrasts (MOMMY SHOE versus MOMMY'S SHOE, and several parallel examples, randomly varied as far as I can tell), and the new contrast between forms like STAND and STANDING. Also, prepositions have occasionally come in like the above SHOE ON, as well as some uses of OFF. I've also heard her say PLAY and maybe PLAYING, DANCE and DANZIN, and possibly SING/ SINGING. But again, it is really probabilistic whether she provides these morphemes or not.

11/2/84. There is now lots of talk about possessors and possessions, but the forms vary quite a lot: SWEATER DADDY, BABY SWEATER, JULIA SWEATER, JULIA SHOES, JULIA CAR, COCO (NICKLE) MINE. Also MOMMY'S GLASSES. Note that this makes a total of three ways of talking about things that belong to herself: Julia X, Baby X, X mine. Add the presence or absence of possessive markers to that, and add variations around order, and it looks as though just about all possible forms are being used right now.

Heidi reported to George the other day that Julia had said TURTLE LIKE HEIDI SHOE. I take that with a grain of salt, but in light of the various turtle fantasies that have appeared lately, it's not impossible.

At the zoo the other day, Julia called the iguana (spontaneously) BABY GUNGA. With alligator a few days ago and iguana now, her animal vocabulary is really exploding. In fact, there seem to be half a dozen new words every day. I have really lost track.

We have lots of conversations about the past now. For example, Halloween night we went to a baby party at her friend Becky's house (with Julia dressed as superman). The next day I began a DO YOU REMEMBER.... sequence: re the stop at McDonald's before the party, the things that happened at the party, the names of the children who were there, etc. I did of course provide a lot of 'scaffolding', but Julia would add bits here and there that she remembered too. The next night we were dropping her off at the same house for a couple of babysitting hours. She kept saying PARTY PARTY on the way over (pronounced PAWEE). The DO YOU REMEMBER game has gotten so well established that I can now use it to calm her down if she is fussing in the back seat of the car. She gets this terribly intent and intelligent look in her eyes, occasionally smiles when she provides some missing piece, and waits for me to continue feeding her bits of the past.

Another new form: CUT IT in reference to WAFFUH (WAFFLE). She also said SPOON (though unfortunately she was referring to a fork....). Another verb EAT, which has also been heard in conjunction with EAT IT. Sounds like she's ready for La Jolla High School....

11/4/84. Last night we were going through old toys, and I pulled out two plastic sticks, each with a wheel-like round block on each end. This was the same construction that I had used months ago to try out elicited imitation of various gestures (telephone, brush, flower, bottle). This time I handed one to Julia, and then proceeded to elicit quite successfully gestures associated with the following objects: telephone (receiver to ear), flower (sniffing), car (rolling back and forth), baby (hugging), ice cream (licking), spoon (scooping and eating), glasses (placing across the bridge of the nose), hat (putting on the head), shoe (placing against the foot), and bottle (sucking/mouthing the end). On each of these, I modelled the action myself while saying the name. On two of them—spoon and bottle—Julia actually carried out the act before I had a chance to do so, responding just to the word. She also spontaneously went back to most of them in between modelling, including both gesture and words or sound effects: telephone ("HELLO"), car (picking up mine, setting them side by side and saying TWO CAR), ice cream (ICE), glasses, hat (HAT), spoon (POON) and bottle. Later on I also got her to brush her own hair, a doll's hair, and an elephant's hair with the same object. So that makes a total of ELEVEN SCHEMES!!!! The only one of these schemes that she didn't actually accompany with relevant speech of some kind was "glasses". Perhaps that word has too many "S's" in it.

More function words: TOO (as in MOMMY WATER TOO when trying to get me to accompany her in drinking out of doll's cups), and AWAY (now very common, usually in second position). However, I still have the impression that word order is at best a stochastic and word-based process. Also, despite her excellent lexical comprehension these days, she still shows no sensitivity to order as a cue in comprehending sentences like MAKE THE X KISS THE Y, etc. More evidence for the lexical

side of comprehension came this morning, when we were listening to a political commentary by a New York Times columnist with, come to think of it, a southern accent. The man said something like "The Democratic party has become the party of access for those just breaking into the system." Julia, who has been to four parties in the last week, looked up smiling and said PARTY!!

11/5/84. Julia's sense of self seems ever more established. Besides all the talk of possession, and recognizing herself in pictures, she now can tell me EXACTLY who she is. This morning she was seated on the kitchen floor while I made breakfast, using a favorite nonsense word ABBIGAH. Absent mindedly I said to her (just to keep up a sense of conversation) "Oh, are you an abbigah?" She retorted "No ...DOODAH!!" (i.e. "No, I'm Julia...."). Later this morning she was back in her car seat making squeaky noises and laughing. I looked back briefly and said "What are you doing?" She responded "DOODAH MONKEY", and went on with her imitation, still laughing.

More function words: THERE, HERE and UP HERE. More verbs: COME/COMING. She also has an expression X GO, as in "DADDY GO" or "TRUCK GO" which is used with a question intonation and seems to mean "WHERE DID X GO?". I think, though I'm not sure, that this particular formula does have a reliable word order.

This morning she placed a cardboard plate on top of a bowl and announced that she had created a TURTLE. Also, she had lined up four blocks near the turtle, alternating white and blue. First she seemed to say that it was a CHOO-CHOO. But a few moments later she pointed toward it and said BABY GUNGA (baby iguana).

It seems to me that her use of the word BABY has become more confused. It used to mean small, but now seems to be used for things that are especially big as well. However, George notes that he has heard her say BIGGEE. Perhaps she is trying to sort big/small out and is temporarily confused by some kind of phonological similarity between the two.

Speaking of phonological similarity, Julia quite clearly pronounces MILK like BOOK right now. On the other hand, yesterday she said ALLGONE entirely correctly for the first time.

11/11/84. Picking up on the phonological theme from the other day, Julia still (indeed more so) says BOO for MORE. This is used not just in requests; we were in heavy traffic the other day and she looked out the window and said BOO CAR. In this light, I noticed that her pronunciation of the word ANOTHER is now very distinctly AHBOO. I wonder whether she has created a phonologically/semantically consistent contrast between BOO/AHBOO.

Some new verbs and other predicates: HURT, BROKEN, PLAY (for example, in the imperious command PLAY, MOMMY!), HIDE/HIDING (pronounced HIDENEE). She also asked me to draw a turtle for her, handing me a piece of paper and saying DAW TOODOO.

She started indirect quotations now. First, she was trying to tell us about the fact that Baby Ben had learned a gestural routine (raising his arms when his mother said HOW BIG IS THE BABY?). Julia's description went as follows: BEN UP (raising her arms in imitation). Now, should I write this BEN

“UP”? I'd have been skeptical, except for a new incident this morning. She was looking at her cloth man-in-a-balloon across the bedroom, saying MAN BOON. When George came into her bedroom to get her, he heard her say: MAN “HI DOODAH!” DOODAH “HI MAN!” The intonation on this was very clear: low tone for the naming of the two speakers (as though she were reading a play), with a high greeting intonation on the hello portion of the message. It was very clearly an attempt at describing quotations.

I saw herself in a department store mirror and immediately said DOODAH! I guess I'm not surprised, given all the self-reference lately, but since it was a new mirror in a new setting, I guess this constitutes some kind of proof of self-recognition.

Tamar, a graduate student who Julia has barely met, came over last night to babysit. During the how-do-you-do segment of the evening, Julia went into paroxysms of coyness and cuteness, to the point of standing on her head grinning, handing Tamar half-finished crackers and then giggling, etc. What I found most amusing were Julia's adult-like attempts at foolish conversation. Apropos of nothing, she kept trying to tell Tamar about significant issues in the last few days, all totally undecipherable to anyone but me. For example, last week she had heard Cindy describing Turtle Wax for cars, and was so struck by this that she kept trying to tell us all evening CINDY.... TOODOO CAR.... TOODOO CAR CINDY .... etc. Well, last night (many days later) she was trying to tell that ‘anecdote’ to Tamar! She also launched into the BEN UP! story; and went on and on about the turtles and monkeys and iguanas at the zoo. I made me think about how I used to babble egocentrically on blind dates (and still do at conferences....) There is only a marginal difference in how Julia and I select our anecdotes for consumption (the main difference being that I've told mine more often....).

She is switching back and forth now between “I” and “DOODAH”. This morning she was imitating the Ben gesture and said DOODAH UP, and then switched to I UP.

11/12/84. Julia is very good these days at saying PLEASE and THANKYOU at the right spots. She also says HERE while offering something (and if it is food, and I demur, she follows up with EAT, MOMMY!).

George took her for an elephant ride at the zoo yesterday. She came home telling me all about it saying TOUCH E-FUNT... EARS .... BOOM BOOM (the latter accompanied by an up and down whole body movement indicating the nature of the ride). She also pointed proudly to the sticker on her shirt that says “I rode an elephant at the San Diego Zoo.” Tonight George had her playing elephant, with both of them astride a giant living room pillow. Julia insisted that the pillow be covered with a cloth to resemble the seat.

Since she got a small but mean burn on her fingers last week, her repertoire of pain words has increased: BURN (“BUHN”), OWIE, HURT, FINGER BURN, plus a fake little pretend cry to illustrate what happened.

Julia seems to be sticking in a kind of placeholder for modal auxiliaries, a sound something like UMMUH in front of things like UMMUH CUT IT, UMMUH GO (as in “Wanna/Gonna cut it” or “Wanna/gonna go”). Also, there is more and more alternation between I and DOODAH.

She is doing better and better on colors, including PINK, GREEN, BLUE, PURPLE, and sometimes ORANGE and RED. We've exercised these lately during the sorting of crayons (now called COLORS, which are applied to a COLORBOOK). But she also generalizes them to other things in the world. She might also know YELLOW, though that one is less clear.

In counting strands of beads the other day she said ONE.... TWO.... BOG (more).

She tries to say PUZZLE now instead of PIECES, in reference to her jigsaw puzzles. But she also has a word GOES-HERE used to ask for help with puzzles, and also apparently as a word for puzzles and puzzle pieces.

11/13/84. Julia still says COCO for both PICKLE and NICKEL. But there are two interesting extensions of this phonological pattern: TICKLE is pronounced COCO (as in COCO-COCOCO while trying to tickle my knee), and the other day she tried to pronounce BICYCLE as BICUHCOCO.

11/20/84. A big burst of prepositions, locative particles and other efforts toward closed-class forms this week: BUTTER FOR POPCORN, COME HERE, COME ON, UP INDA SKY, POPCORN IN DERE, DERE MACARONI AND CHEESE, DO IT AGAIN, PLAY WITH PUZZLES, PLAY WITH IT (followed by PLAY, MOMMY, so “it” is separable from PLAY), MOMMY ALLGONE AWAY, MOMMY AT WORK, MOMMY AN DADDY. Also, COME SEE and WHERE GO? COOK now co-varies with COOKING. She has repeatedly tried to tell anyone who will listen about the fact that Cindy accidentally hurt her finger (Julia grabbed at her curling iron and got a burn) by saying CINDY NNNA BURN. It's as though that NNNA is a placeholder for verb stuff that is supposed to go in there. She also said HI PEOPLES tonight (pronounced PUH-PUHS), a novel overgeneralization of the plural 's.

She now varies between YEAH and UH-HUH and MM-HMM, all of which I must admit sound very grownup and cute.

A big long sentence this morning: Virginia asked “Where's your ticket?” (in reference to a fake ticket to the zoo elephant rides that George had cut out and drawn for her), and she answered “TICKET IN DADDY'S POCKET.”

11/23/84. Julia has started pronouncing the “m” in MORE and in MILK. Meanwhile, however, she's developed an odd phrase MUCH MORE, which seems to mean something like MORE AGAIN, or AGAIN MORE, although it may be intentionally used as some form of emphatic marker. I'm just not sure. But it sounds very dramatic!

New animal names include CAMEL, KANGAROO. She has a funny pronunciation of LION as HIDON, but it is clear what she means. The colors PINK and PURPLE have begun to fascinate her so much that she insists on wearing one or the other, and goes around the world naming pink and purple things wherever she sees them.

She now names things several times with the introduction THAT'S A. Plurals are used more and more consistently. I've heard the phrase WANNA several times. On the other hand, she has this placeholder verb NNNA that seems to smooch together auxiliaries and copulas as in the phrase CINDY NNNA BOO-BOO (in reference to the accidental burn no less than two weeks ago). So maybe the perceived WANNA was really one of those. In general, though; morphology is sort of ‘leaking’ in, in a

probabilistic hit-or-miss fashion: occasional uses of IT, I, ME, 'S (as in IS), 'S (as in possession), 'S (as in plural), THAT, THIS, A/THE.

11/24/84. Julia is doing much more immediate imitation this week. For example, this afternoon she saw a 2-foot-tall robot in a department store, and George made it chase her, saying "The man is chasing you." She came over to me shortly after saying excitedly MAN CHASING YOU. George suggested she should tell Cindy all about it on Monday, so about fifteen minutes later in the car she said TELL CINDY DOODAH MAN.

Virginia left yesterday after a week-long visit. When George brought Julia in the door at 5:30, she started looking around saying GINIA GO..... I told her "Virginia has gone back to Rome", and she thought for a moment and said GINIA GO AIRPANE. Then a moment later she said GAGA GO AIRPANE, followed by LADY GO AIRPANE (a reference to our guest Angela a few weeks earlier).

I asked her this morning if she wanted one cracker or two, and she said TWOS. I think that might be an overgeneralization of the plural. Meanwhile, later on I asked if she wanted a cookie or a cracker, and she said COOKIE TOO (or at least I think that's what she meant—given the proliferation of TOO and TWO I'm no longer sure which is which).

11/25/84. Julia has begun to turn my "Do You Remember" game back on me, launching into some story about the past and saying about the seals at the zoo (which she hasn't seen in at least a week).

11/27/84. Yesterday morning George asked Julia what she wanted for breakfast, and she responded HAMBURGER. She was told "Hey, look, this isn't McDonald's, we don't have hamburgers here," which she seemed to accept after a certain amount of grumping. An hour or so later she came across a couple of straws left over from a trip to McDonald's over the weekend, and came over to me with the outrage of the deceived saying FWIES! FWIES!

Still more of the 'MEMBER? game, including a rehearsal of a shopping center trip saying CANDY INNA STORE. She has also recounted several times the visit from Ann and Kerry's baby Erin, whose diaper was changed on Julia's very own changing table: EMBER? ERRRN....TINY BABY.... POOPIE BABY.... Another story she keeps telling regards the visit to see the iguana Saturday, when she dropped her graham cracker in the iguana's pit and the animal rushed over, to devour it immediately: EMBER? BABY GUNGA EATA COOKIE.... EAT DOODAH'S COOKIE.

George initiated a game of Visit-the-Zoo at home, complete with an elephant ride (astride a large pillow with a towel for the "saddle"). They look from side to side and George asks her to point to the seals, the turtles, the camels, etc.—which she does, changing the direction of her point in response to a new query. She also got into the game of walking around the house holding George's hand, to visit the turtles, then the iguana, etc. She did, however, balk at petting a pillow/turtle.

11/28/84. This morning we were walking towards Cindy's house when Julia pointed in the distance (at, so I thought, some wind chimes in an apartment window) and said quite clearly, several times, COOKIE BANK. I had no idea what she was

talking about (it was said with the same intonation as "cookie jar"), until Cindy told me that they walk that direction whenever they go to the bank, and that Julia always gets a cookie when they go over there.

For reasons that elude me, J pronounces RAISINS as something like MINDIES (or occasionally, RINDIES). She also said PEANUTS tonight, but with a very odd pronunciation something like PEEZUNTS. There seems to be some kind of productive form of syllable reversal going on.

## JULIANOTES 6

It is April (1985), and we are just back from our 3½ months in Rome. My notes from December through March are really very scanty given all that happened in the interim. For one thing, Julia clearly made the passage into 'grammaticization' in this period (from 20 to 24 months). In addition, there were many interesting new events revolving around her discovery of Italian. But the best I can give is an impression of what took place, from notes hand-scribbled during our visit.

12/19/84. I heard the contrast between IS and ARE for the first time. Some other interesting contrasts: MY XXXX versus I HAVE A XXXX (i.e. yet more ways to indicate possession...), and COOK IT versus PEAS COOKING (which suggests that the -ING really is a productive ending now, since verbs can occur with or without it). See also CUT IT, KISS IT, and several other XXXX IT constructions, suggesting that IT now serves as a kind of general accusative marker added to imperative forms of the verb.

Another new variation is WANT X, as well as UH WANT X (meaning I WANT XXX). This is the first sign of an explicit modal verb, although earlier there seemed to be a kind of "UH" placeholder serving the WANT function. There is also the first clear use of the irregular past, in the sentence BUS CAUGHT.

The other day Julia was holding two cigarettes, and said "I GOT TWO'S", an interesting overgeneralization of the plural. I've actually heard several of these now, but I can't remember what they were.

AT DUH STORE (as in AT THE STORE) is a phrase Julia now says frequently, whenever she is told that something isn't there or is gone. She says it with a funny little sing-song intonation, a kind of caricature of resignation (as in oh dear/ho hum).

Some first signs of Italian: Julia picked up a telephone and said "PONTO"—from PRONTO or READY, the usual way of answering a phone in Italy. That's particularly interesting, since we don't have a phone in the house, so she hasn't that all that many opportunities to observe the ritual.

Julia has started a veritable orgy of empty-handed pretend play. This began at Grandma's house while we were on our way to Rome, but has continued with a vengeance here—perhaps a reaction to the relative absence of toys while we've been in transit. Some examples (at least the ones that are recognizable) include the following:

- making coffee without props (saying WANT MILK)
- putting invisible poopy diapers in the trash
- giving lots of invisible packets to people
- putting on band-aids (saying BAND-AID)

- putting her head on a real pillow on the living room rug, while pulling up an invisible blanket and saying BANKET
- an empty-handed popcorn-making sequence
- with her father a long sequence of digging an invisible hole and planting an invisible tree.

There are probably more, except that I can't figure out what they are, since she seems to spend a lot of time carefully moving about invisible objects, without accompanying narrative.

Sentence of the week: DADDY BABA KITCHEN DOODAH (Daddy's making a bottle in the kitchen for Julia). With that many case relations in one sentence, can grammatical morphology be far behind?

Julia's babysitter for our time in Rome will be Francesca, who took care of her the last two trips. The first time we started talking about Francesca this trip, Julia immediately said CASA, and called her that for the rest of our time here (although toward the end of our visit Julia did start saying FRANCA). She has also been playing with our names quite a bit now too, saying MOMMY...ELIZABETH and DADDY...GEORGE...GIORGIO. She seems to think this is very funny, particularly the new discovery that I have a name of my own. Maybe she noticed the name ELIZABETH because that's what people call me here in Italy; she never seemed to pick up on LIZ at home, although she did know her father's real name. In general, I should note that she is picking up names for people at an extraordinarily rapid pace—in fact she seems to be doing better than George at remembering various Italian names. One of my favorite of her names is SARA, for Virginia's daughter. There was a SARAH in San Diego, which Julia pronounced in the usual American way. In the case of Sara, Julia seems to be trying to capture the Italian long A as well as the trilled R, resulting in a pronunciation something like SAHDAH.

Julia still misses and talks about home a lot: Some of it is heartbreaking, when she says "MEMBER SAN DIEGO?" or "MEMBER CINDY?" She broke down crying on seeing Bernini's elephant statue in Piazza Minerva, saying RIDE ELEPHANT SAN DIEGO!

12/29/84. Some new Italian words: VA BENE, ANCORA, QUATTRO-CINQUE-SEI, and DOV'E. She also says numbers now in English, though I don't think she understands which numbers go with which quantities of objects (i.e. she can't tell you how many objects are in an array when asked).

New English morphology: HEARD DOGGIE and I GOT A XXXX. So past-tense morphology is really coming in.

The empty-handed play has diminished a bit. But she still talks a lot about San Diego: CALIFORNIA ...HOME...GO AIRPLANE... CINDY IN SAN DIEGO, etc. After a long period of silence about Cindy, she now asks and talks about Cindy all the time.

She's also very sad when we leave her in the morning, crying desperately (something she never did in San Diego—although she did cry on being left last summer in Rome). Francesca assures us that the desperation doesn't last after we're gone, and indeed she doesn't seem angry with us or at all anxious to leave when we come to pick her up.

There is a lot more question-answer dialogue held between Julia and Julia: WAN GO TOY STORE? .... OKAY!! This may

be part of the burst in elaborate pretend play. It's probably fair to say that as long as Julia is awake, wherever we are or whatever we are doing, she is talking.

1/13/85. The numbers game continues: ONE TWO MORE .... QUATTRO CINQUE SEI. Apparently the Italian and English numbers form part of a single series from her point of view. But she also 'cheats' sometimes by saying ONE ONE ONE!

Julia is still struggling with the babysitter changeover, despite all of Francesca's loving efforts. The other day she said CASA DON'T LIKE YOU, CINDY LIKE YOU (where YOU seems to mean ME). Since Francesca adores her, this condemnation clearly reflects Julia's continued homesickness.

Still more complex sentences, with four words or more but no morphology: WANT SEE MAN RUN! is just one example of some embedded object complement structures that have popped up lately.

On seeing a wine bottle label with castles on it, Julia said PEOPLE MAKE PARTY, an apparent reference to the medieval scene of a party in her Sleeping Beauty book. She enjoys that book a lot, although she is quite concerned about the scene where the princess pricks her finger with a spinning wheel. Julia puts an invisible band-aid on every time. She is also a bit worried about the witch, particularly the scene where the witch points her bright wand at the sleeping infant. Julia says "BURN BABY" at that point, with great concern. We tried to assure that it was just a sort of flashlight, but she doesn't seem convinced. This turned out to be unfortunate when we had to take Julia to the pediatrician to have her ears checked; she became terribly upset at the little flashlight that the doctor brought toward her ear, talking about BURN again. I know that she still remembers the time that Cindy accidentally burned her with a curling iron, so maybe this has all run together somehow.

New Italian words: CHE SCHIFFO! (HOW DISGUSTING!) and MANAGGIA! (the Italian equivalent of DARN!) She also counts in Italian all the way up to ten (still a word game, with no consistent counting of objects).

LOLLIPOP is reliably pronounced DORRYCUP. We liked this word so much that we picked it up ourselves, so I doubt if Julia will ever learn the orthodox English pronunciation.

There is now very clear I/YOU confusion, in phrases like LIKE YOU, CARRY YOU, HELP YOU, and HOLD YOU, where YOU quite clearly means ME.

Julia seems to be constantly chattering, at play, in the car, 'debriefing' herself on every new experience. And much of that debriefing centers on our comings and goings: DADDY GO WORK....MOMMY HOME... There is clearly some separation anxiety going on here, which she is trying to work through out loud all the time. She also announces her play plans all the time now, as in I GO STORE .... BUY MILK, uttered before a little 'trip' across the living room or out into the hall. There is also a lot of whispering going on.

I rather liked the following quotation yesterday: BEAUTIFUL JULIA (uttered before the mirror), followed by MOMMY BEAUTIFUL. She is constantly deluged with compliments here in Italy, and has come to take them seriously. But I thought it was nice that she extended this one to me as well.

We tried a new preschool: a disaster. Julia just wanted to hang around with the adults. After a week, we gave up. We didn't like the school all that much anyway, and Francesca is so loving and increasingly successful with Julia: Interestingly, though, the teachers reported to us that Julia understood much of what they said to her in Italian, and often spoke Italian to the other children. I wish I knew what she said, but there is no way to recover that now.

Julia has an odd use of NOW, attaching it all over the place as though it were some kind of emphatic or aspectual marker (as in NOW THIS IS REALLY THE CASE...). Her uses aren't exactly wrong (as in HE ALL FIXED NOW, but they age so frequent that they seem to mean more than the usual English usage of NOW).

2/4/85. Julia has started pronouncing her old word CIUC-CIO as CIAO CIAO!! Furthermore, she was very resistant to my attempts at saying "NO, THAT'S A CIUCCIO." Once again her principle of phonological economy is at work.

But there are some places where she obviously hasn't made her mind up what form to use. She varies consistently back and forth among the three forms I, DOODAH and MY. Also, she continues to play with our names, including MOMMY... MAMMA... ELIZABETH. I think the variation between MOMMY and MAMMA is a nice example of Italian seeping in.

2/5/85. I think Julia is a genius at kinship. We had an incredible exchange today, around the routine WHAT'S X'S Y'S NAME. She correctly answered the following questions: WHO IS DADDY'S BABY? SARA'S DADDY? VIRGINIA'S BABY? VIRGINIA'S GIRL? TRAUTE'S GIRLS? CASA'S DADDY? CASA'S MOMMY? CASA'S DOG? CINDY'S BABY? CINDY'S GIRLS? HEIDI'S SISTER (she had to be prompted on that one, with the input "Heidi is Sara's sister"), and finally CASA'S DADDY'S DOG!!! We went through these literally dozens of times, every example I could think of, and she was at least 80% correct across the set.

We got some new blocks, to Julia's delight, and as soon as she sat down she built an 8-block tower with small and precarious cylinders. She now spends a lot of time building.

There are more and more signs of comprehension in Italian now. She will occasionally translate from Italian to English, e.g. when I said to Francesca DOV'E IL BIBERON ROSA? (WHERE IS THE PINK BOTTLE?), she said PINK BABA and started looking around.

Julia and George went to a park where they happened to see a spider sitting on the seat of a motorcycle. She was quite nervous about the spider, and a few days later when we drove past the same park she looked out the car window and said SPIDER PARK. In fact she seems to be more and more astute about recognizing where we are driving to, even when we're still a couple of blocks from, say, Virginia's house or Francesca's house. Poor thing, she does have to spend a lot of time in Roman traffic....

Several prepositions and locative terms are clearly established in English now: FOR, TO, IN, UP and DOWN.

2/23/85. Julia is quite into negation (alas). Virtually any adult proposition that doesn't please her will be repeated, often in its entirety, preceded by the word NO. As in "We're going to

go to the coffee store now" .... "NO GO COFFEE STORE NOW!!".

Julia is surprisingly good at faces, recognizing pictures that she has only seen a couple of times. On two separate occasions Julia has seen a baby picture of a much older person and figured out exactly who it was: once with a picture of Virginia's daughter Sara (now 11 years old) at one year of age; another time with a picture of her babysitter Francesca (who is now in her 20's) at about one year of age. Frankly I can't explain it, because—at least in the case of Sara's picture in Virginia's office—there weren't that many cues other, than the face itself. Unless she made the inference that, if there was a baby picture in Virginia's office, it had to be Virginia's daughter—and if that is what she did, then I'm even more surprised.

The pretend play seems to have lessened, perhaps because there are so many more real toys around. But there was a nice one the other day: she picked up a paper napkin, wrapped in a vaguely cylindrical shape, and announced that it was an ICE CREAM, licking vigorously to prove the point.

3/13/85. George was drawing things for Julia when she said "DO ABCDE!"

While they were pretending to wrap presents, they pretended that a metal disc was a cookie to be wrapped for the babysitter's dog Janus. After they were finished, Julia said "Daddy has messy hands!"—an apparent reference to "pretend" dirt from this exercise. In one of many post Xmas Santa Claus games, Julia touched her chin and said "See beard". So the previous bout of play with invisible objects seems to be moving in the direction of representation play with language doing more and more of the work.

Sentence of the week: DONKEY CALLED ALL THE PEOPLE. Runner up: MILK IN MY BOCCA (i.e. Italian for "mouth").

3/26/85. We are now at the end of our Rome trip, and Francesca has given me the following list of Julia's Italian words and phrases, carefully logged across the last three months, I think in approximate order of acquisition. Remember that these are the ones she has seen when we weren't around, usually at Francesca's parents' house where Julia spent many lunches and afternoons. We've seen a few Italian words that aren't on this list, but most of them are foods served in our house that may not have shown up on their lunch table.

ANCORA	(again)
VA BENE	(okay)
BELLO	(beautiful)
A CUCCIA	(sit down, addressed to dogs)
IANUS	(Francesca's dog's name)
FULVIO	(Francesca's father)
MANAGGIA!	(an Italian term meaning "DARN!")
CHE SCHIFO	(How disgusting!)
PANE	(bread)
ASPETTA	(wait)
GIADA	(little girl downstairs)
FEDERICA	(another little girl)
CIAO	(hi/bye)
GRAZIE	(thank you)
SILENZIO	(hush)
MAMMA	(mommy)

PAPA	(daddy)
ECCO FATTO	(there, done!)
NON PIANGERE	(don't cry)
METTI A POSTO	(put away)
MARCO	(the man who runs the grocery store)
BRUNO	(another neighborhood merchant)
SALUTE	(to your health, said to someone who has sneezed)
BUONO	(good)
BUONGIORNO	(good morning)
BUONA SERA	(good evening/afternoon)
ARRIVEDERCI	(good-bye)
AIUTO	(help!)
GELATO	(ice cream)
ALLORA	(so now...)
DUNQUE	(well then...)
UOMO	(man)
BIMBI	(babies)
GIACCA	(jacket)
UNO, DUE...	(numbers from one to ten)
DISPETTOSO	(disrespectful, a phrase of rebuke)
PROSCIUTTO	(ham)
FRAPPE	(seasonal cookies)
CATTIVA	(naughty)
NASO	(nose)
GUARDA	(look!)
BOCCA	(mouth)
ACQUA	(water)
ASCIUGAMANO	(towel)
PAPA GIOVANNI	(Pope John, in reference to picture)
STA ZITTO	(shut up, addressed to barking dog)
PARMIGIANO	(parmesan cheese)
LANA	(wool, usually yarn when Francesca is knitting)
PICCOLO	(little)
PIANO	(quiet, slowly)
ECCOMI	(here I am!)
FAGIOLI	(beans)
CAROTA	(carrot)
MANDARINO	(mandarin orange)
SCARPE	(shoes)
UN ALTRO	
PEZZETTINO	(another little piece).

Notice that this list is radically different from Julia's early word learning in English. Except for people's names (and there were many more, among our friends, than appear on Francesca's list...) and foods (remember that most of her Italian was learned over lunch at Francesca's parents'....) most of these are social-regulatory expressions, for which Julia has no English equivalent. This is the early vocabulary of a so-called 'pronominal/expressive' type of child! Whereas Julia's English language acquisition is at the radical end of the opposing 'nominal/referential' end of the continuum. Son of a gun! There were only a few occasions, looking back, in which Julia spoke Italian to us: PRONTO on the phone, and mixing in the words BOCCA (as in IN MY BOCCA.... ) and ACQUA (which, in fact, has persistently been her word for water since she acquired

AWA in Rome last summer....). I tried frequently to make translation an explicit game, as in HOW DO YOU SAY XXXX IN ITALIAN? or HOW DO YOU SAY YYYYY IN ENGLISH? She never showed any sign at all of understanding or participating in this game, despite the clear signs that she understood a considerable amount of Italian and translated spontaneously from time to time. Perhaps there is a huge functional difference between Julia's English and her Italian because, above all, she doesn't realize that these are two equivalent codes. For her, English is the 'real thing', the language that is used to categorize the world. Italian is a set of speech acts, word games, things that one does in Italian company.

3/26/85. (Notes on the airplane home). Julia now uses an array of prepositions almost like case markers, except that they receive the same full stress given to lexical content words. These include: WITH (X), IN (X), FOR (X), TO (X). It is interesting to me that each of these carefully selected prepositions can be a separate case marker in many of the world's languages, i.e. endings for the concomitative/instrumental (WITH), locative (IN), benefactive (FOR) and dative (TO). Other appropriately used locative expressions include BACK THERE, BEHIND, and ON TOP and UNDERNEATH (both the latter used in dressing). But these are not used in the same way, as prepositions directly preceding a noun or noun phrase. Instead, they seem to be adverbials that can stand alone or be added at the end of a sentence. (Sentence of the week at Grandma's house the next day: I GIVE A KISS TO LION ON THE EYES FOR GRANDMA.)

Sometimes Julia even provides main stress on bound inflections, as in the question TAKING A BATH with very heavy stress on -ING. So-called grammatical function words may have a separate status from content words in linguistic theory. But I don't think that they have a separate status for Julia. She pronounces them just like she would a stress-bearing content word.

After a long period of pronoun-switching, as in MOMMY CARRY/HOLD/HELP YOU to mean YOU CARRY/HOLD/HELP ME, Julia has started using YOU correctly. The correct use showed up in a whole bunch of contexts at once: FOR YOU, YOUR TURN, YOU PUT IT, etc. She has also started saying I, and ME in FOR ME, but much more sporadically. The determiner SOME is very common, indeed heavily overused, as in the odd declarative sentence DERE SOME SOCKS DERE.

Julia comments very frequently on the colors of things, and she's almost always right. I don't remember initiating such a color-naming game, and I thought that (according to the literature) color wasn't supposed to be a terribly salient dimension for young children. But she seems to think it is worth pointing out somewhere between 1 to 10 times a day.

When our airplane started to take off today, she suddenly (for the first time) became very frightened, saying TOO HIGH! WANT DOWN! NO GO UP! Despite all her airplane trips, this seems to be the first time that she realized we were going up in the air.

TOO HARD and TOO FAST are also common expressions now. The phrase TOO HEAVY—my frequent complaint about her these days—she tends to use when she is afraid that I don't have a good grip on her, and she will slip from my arms.

4/22/85. Several modal verbs have started to come in. CAN was the first one, about a month ago, as in YOU CAN SIT HERE (with very heavy stress on CAN). DON'T BITE IT, said to a baby about to mouth one of her toys, came in last night as the first instance I have noticed of use of the auxiliary DO. I have now heard WILL in the future sense, as in I WILL SIT HERE. WANT TO X has been around a while; NEED TO X seems to have just come in, as has YOU HAVE TO X or HE HAVE TO GO PIPI.

Since we got back to the states, Julia has rarely shown any sign of using Italian, except again for the two words BOCCA and ACQUA, which persist in place of their English equivalents. The only times I've seen her speak Italian in the States were to ducks and dogs at the beginning, in New York, when she said SENTI! and VIENI QUA! during a visit to the park. I think she had a principle according to which she would speak English to anyone who gave signs of speaking English—and in New York only the ducks and dogs were an exception!!

She has started to use ME as a subject pronoun, as well as several instances of the unusual overgeneralization ME'S, intended as a possessive. On one occasion she alternated through all three possibilities, saying I DO THAT .... JULIA DO THAT .... ME DO THAT, in direct succession. Afterwards, she paused and looked puzzled as though mulling things over.

Verb overgeneralizations are quite noticeable now, including some examples like BRINGED. I still hear quite a few word order 'errors', usually VOS or VS constructions where the subject seems to be an afterthought. But I have also noted a couple of other odd ones that I unfortunately didn't write down at the time, but I remember that they were SOV constructions because I once said "What do you think you're speaking, German?"

She seems to be making a stab at using the indefinite A; this would round things out, with SOME serving as a plural indefinite and THE now barely established as well.

I noticed a particularly interesting kind of generalization this week. Having mastered the 's plural and the 's possessive, she had just started moving into the use of 's for the third person singular when she apparently decided that 's final was a much more general principle. Now she attaches it to all kinds of forms, including: NO'S (which came in symmetrically during the transfer from YEAH to YES this past week), WANT UPS or GET DOWNS, and a variety of other odd spots that I can't remember. An interesting variant two weeks ago was the sentence DADDY MAKE JULIA'S CRY. I think maybe she was trying to form an analogy with possessive structures, as in DADDY TAKE JULIA'S BOOK.

I've now heard a couple of WH questions, which were remarkably absent for a long time. In fact, I just realized the other day that, despite her apparent facility in picking up new nouns, Julia never asks me WHAT'S THAT? She did, however, start saying WHERE'S X. She also quite reliably answers a lot of different question forms now, as in WHAT DID YOU DO THAT WITH, HOW DID THAT HAPPEN, WHO GAVE IT TO YOU. On WHY questions, she often seems to be guessing, answering YES with a wise and solemn look. I know a lot of academics like that...

Julia has become a very complicated person from an emotional point of view. When I had to go to Paris for four days

during our Rome trip, she never asked directly about me. She did, however, nag her father incessantly about the whereabouts of the hairdryer—and that was the first thing she asked for when I came in the door. The next day, when I went to work, she had to be reassured that the hairdryer was still in the house. She has apparently learned to discriminate short- and long-term absences by the presence or absence of the hairdryer.

Also, we can't laugh at her anymore without risking hurt feelings. For example, on the airplane home she cried and said I HATE DADDY when she thought George was laughing at her. She does have a sense of humor, though, teasing and making jokes (e.g. pretending that she has a poopy diaper when she doesn't, and laughing when we check and find out it was a false alarm).

Julia has become very interested in drawing and writing now, sometimes verging (but not too well) on closed forms. Occasionally I've seen her quite deliberately cover an entire piece of paper with an intricate scribble pattern, not resting until the whole thing is done. (This obsessiveness has shown up other times when she insisted on trying to clean all the stones off a path in a park, or removing all the leaves from the lawn, one at a time.) She is very fond of a Sesame Street song about the letter J, can pick J out of letters on a page, and recently picked up a wooden number 6, calling it a J. I suppose this is the point where we should start introducing the alphabet, and the whole idea of reading, but we're so lazy that she'll probably have to insist upon it herself (as she has had to insist upon toilet training, overcoming our reluctance to abandon the convenience of diapers).

BOOBOOs are still a big theme, so much so that I sometimes fear that we're raising a hypochondriac. Three weeks ago we were waiting for Barbara to come over, and in her excitement Julia fell on the front porch and hurt her arm. She still insists on having a band-aid on the very spot (which, in fact, has gotten sore all over again from the band-aid itself). Furthermore, from that day forward she has blamed the injury on Barbara! She still goes around telling people that BARBARA DID THAT or BARBARA MAKE A BOOBOO ON MY ARM. I guess I can follow the reasoning; I've done it often enough to George (i.e. while I was waiting for him to come home, some disaster happened which was hence all his fault...).

We haven't seen as much of the empty-handed pretend play that abounded at one time, but her pretend play with objects is getting more and more elaborate: creating beds and changing tables for Fischer-Price dolls out of blocks and other minimal forms, making "presents" out of blocks wrapped in scraps of paper, having "birthday cake" in the bathtub with great sound effects testifying to the yumminess. The birthday game in the tub hit a peak this week: first Julia put two round blocks on a stick and said HAPPY BIRTHDAY, blowing out the "candle". Then she handed her father a vaguely crescent-shaped boat, saying HERE, CROISSANT FOR YOU. She also picked up a fingernail brush, with rounded edges on each side that vaguely resemble cup handles, giving it to her father and saying CAPPUCCINO.

She also tries to act out her current trauma in getting used to a new babysitter, going through separation scenes with her dolls and comforting bereaved Fischer-Price people, as in

“DADDY GOING TO WORK NOW: ... HE COMING BACK NOW, DON'T CRY.”

5/4/85. After my firm pronouncement that Julia doesn't ask the names of things, today in a hardware store she must have asked me a thousand times WHAT DOSE? Come to think of it, though, rarely in the recent past has she been so inundated with an array of strange and incomprehensible objects. She also seems a bit nervous about what are clearly big machines. This may be related to her nervousness and sometimes outright fear of loud noises (e.g. lawn mowers outside). Which reminds me that WHAT'S THAT first showed up not in asking for the name of something visible, but in worrying about the nature of some machine noise outside.

Julia hadn't really seemed to notice much about the anatomical difference between her father and me. But now that she is spending time with her babysitter's 20-month-old son Andrew, the penis seems to have emerged as a category. She pointed to Daddy's in the bathroom the other day, as he was emerging from the shower, and said I LIKE YOUR TAIL. ANDREW GOT A TAIL. George responded that Daddy and Andrew both have tails because they are boys; Mommy and Julia don't have tails because they are girls. Julia (as Freud would predict) refused to accept this diagnosis, responding I GOT A TAIL ON MY BOTTOM. We may have to start working on the right anatomical terms if we want to avoid some real confusions down the line....

She also continues to be quite concerned about physical flaws, querying me often about moles or small scars on my body. Today she asked about some small specks on my arm, and I said “Those are freckles.” She announced solemnly “I NO LIKE FRECKLES....” Thanks a lot.... Another new phrase of hers—of which I am not fond: DADDY FAT TUMMY and of course MOMMY FAT TUMMY. Already a critic!

Today she wanted to take her big toy truck out of the house with us. Since we were on our way to the grocery store, we said no. She began elaborately maneuvering the truck all over the living room, and when George asked why she responded “I parking the truck.”

Her pretend play includes long conversations with the participants. This morning she was setting leaves and one flower out in a pattern on the patio step, and I wouldn't have thought this was pretend play at all until I heard her say (on placing one, smaller leaf against another) HERE YOUR MEDICINE NOW.

It's hard to explain, but I feel like there has been a big new burst in her comprehension. I know I'm using less and less ‘motherese’, and have been giving her more and more complex answers to questions, and explanations about our plans and the world in general. For example, in the hardware store today I was trying to explain what an air compressor is (in fact I'm not sure myself), and later tried to explain what one does with nails. She listens so intently that it really seems as though she understands all or most of what I say. The other night George was reading Pinocchio to her for about the tenth time (she was quite uninterested initially). When they got to the scene where Geppetto is inside the whale, George asked “If I were inside a whale, would you save me?” Julia shook her head vigorously “no!!” He pleaded and cajoled, “Please please, wouldn't you come and save

me” and she insistently refused, finally saying “PINOCCHIO DO IT” (and in fact Pinocchio is Geppetto's savior in the book).

I'm not keeping very good track of Julia's morphology, except to note that she still tends to place a great deal of full-word stress on pronouns, prepositions, modal auxiliaries, and other function words. This gives her speech an oddly ‘precious’ sound. I think she now has all the English pronouns and prepositions under her control now, and I thought I heard her use both “and” and “but” this past week. As a result, she often produces sentences with 10 to 12 morphemes. But every one of those morphemes gets a nice solid intonational ‘thump’, like an amateur actress reading her lines in a play.

We have been initiating “how was your day?” conversations with Julia for a long time now. Yesterday was the first time when she initiated the conversation herself, with me. We were seated at the table eating an early dinner, and she began telling me all about the day at Andrew's house in a kind of sing-song, list-like intonation; “PLAY WITH ANDREW'S TRUCKS.... KIM CHANGE ME.... EAT SPAGHETTIOS....”

5/8/85. Similar to her initial silence about Cindy when we went to Rome, Julia has been entirely silent about Francesca and her family with whom she spent so many days. Suddenly in the last few days the topic of Francesca, Fulvio, etc. has returned with a vengeance. It may have had something to do with a party we went to last weekend, where about half the people were speaking Italian. She woke up the next morning asking where Francesca was, suggesting that she might be waiting for us in the living room. Later in the day, she reminded us instead that we were in San Diego now, perhaps reminding herself as well. These long silences and ‘slow takes’ on emotionally charged issues seem to be a basic part of Julia's personality. She's also much more reserved now on meeting people. She gets more and more like her shy and private father than her talkative and gregarious Mommy. I bet I'll embarrass her to death when she's in her teens....

5/11/85. The hairdryer saga continues, ever more complex. I had to stay at school late for a meeting Wednesday night. Julia began to get nervous as the evening wore on. When she and George went into the bathroom for her bath, she looked up in great relief on seeing the hairdryer and said grinning HAIRDRYER HERE! Evidence that I wasn't out of town.... Later that evening she told me about it, saying HAIRDRYER ORANGE ..... BEAUTIFUL. On the other hand, this morning she was (still) remembering the incident where she burned her hand on Cindy's curling iron, and started confusing it with a hairdryer (or perhaps that is what she thought it was all along....) saying HAIRDRYER BURN. What a complex and thoroughly 20<sup>th</sup>-century symbol!

In fact, separation is ever more a theme in her play. Last night she was playing an elaborate game with her rocking horse and several surrounding dolls. She announced that the dolls AND the rocking horse were called ANDREW .... TWO ANDREWS .... (her babysitter's son's name), and then reported that ANDREW'S MOMMY COME AND GET HIM NOW. We then had a long exchange about how the reunion would go, what Andrew and his Mommy would do when they got home, and so forth. She even ran to the front door, and made a great ceremony of letting Andrew's Mommy in.

Today I was watching a silly beach movie on TV with Julia. When she saw the first ocean scene she said WATER ..... I'VE BEEN TO THE BEACH TOO. This was the first time I have ever noticed a clear cut past-participle form, and it was quite appropriate and apparently productive.

Comment later in the afternoon to our friends' 6-month-old Erin: BEAR, BABY...GIVE HIM A HUG.

A good naturalistic anecdote on failure to conserve: I handed Julia a piece of string cheese, having pulled off a bit for myself first. In what has become a typical territorial reaction, she protested saying TWO FOR ME! I took her piece, tore it in half and gave her the resulting two chunks. She smiled broadly, said a satisfied HA! and walked smugly away.

5/23/85. Two big new words: TYRANNOSAURUS (a picture on one of her father's T-shirts) and HYDROCORTISONE (a tube of cream for severe diaper rash).

Julia still vacillates back and forth among I, ME and JULIA as first-person subjects. But the other day she seemed to be trying to forge a phonological union between I and ME in a sentence that sounded something like NO! EEE PUT NICKEL IN BEESELF. George, who observed this oddity, thought that it sounded as though she were trying to make I and ME, I and MY sound as alike as possible. If so, this would be a late example of the kind of 'phonological factor analysis' to conflate forms that Julia has carried out periodically since she was a year old.

Our Mexican cleaning lady Maria was here Monday, speaking in Spanish with me part of the time and referring to Julia as "mi niña" (my little girl). Later on, that evening, Julia went around saying MI NIN`A .... MI NIN`A. This also seemed to throw her into a mood to contemplate Italian, because within the same hour she pointed to her cup of water and said (for the first time) WATER ...ACQUA.

A few sentences that I scribbled down this week, illustrating some changes in syntax and morphology:

THERE'S A LADY CLEANING THERE (the first existential clause of this sort that I remember hearing)

I GET MESSY HANDS FROM IT (sort of a passive meaning)

I TOOK MY TEMPERATURE FROM THE DOCTOR (as above, pseudo-passive meaning I HAD MY TEMPERATURE TAKEN BY THE DOCTOR).

WHAT ARE YOUR COLOR EYES? (meaning WHAT COLOR ARE YOUR EYES. There were two or three similar violations of WH extraction but unfortunately I didn't write them down and can't remember them).

I DON'T HOW DO THIS (meaning I DON'T KNOW HOW TO DO THIS)

MOMMY PUT AWAY IT, followed immediately by the self correction MOMMY PUT IT AWAY.

I MADE MESS IN LIVING ROOM .... I MAKE MESS....JULIA MAKE MESS (a nice example of competition between forms make/made and Julia/I).

Julia also seems to have discovered the function word NOT. Several forms showed up across two days, including

I DO NOT (the answer to DON'T YOU WANT TO EAT SOME MORE?).

NO, NOT (the answer to DO YOU WANT TO CLIMB UP IN YOUR CHAIR).

IT TASTES NOT (a comment about mustard, building on a phrase IT TASTES that she has used for weeks to mean IT TASTES NICE/GOOD).

Julia has a new little phrase THINK SO, which she attaches to comments like ANDREW SCRATCHED ME, THINK SO. It seems to come from conversations with her father, who often says "Oh, I don't think so" or "Do you think so?"

The term "like" is showing up in a variety of frames such as LIKE THIS or LIKE PEOPLE DO.

Julia is trying more and more often to construct narratives, especially in phone conversations. Last week she tried by phone to tell me a long story about how she had wanted a salad for dinner, and had cried when her father showed her that there wasn't any lettuce. She also tries more and more often to recount her day at the babysitter's, unprompted. She has started using self-conscious UMMMM placeholders while telling about some event, as, though she knows that she has to signal her intention to finish the story or else risk losing the floor.

Julia is still working through my comings and goings in this heavy spring quarter of small trips. When I had to leave for Pittsburgh last week she went around all day saying NO LIKE AIRPLANES. Conversations about hairdryers abounded, as in KIM'S HAIRDRYER BLUE.... FRANCA'S HAIRDRYER GREEN....MOMMY'S HAIRDRYER ORANGE. And the separation theme became even more marked in her play. The morning after the day that I returned, she smiled at me and said MOMMY ALWAYS COMING HOME, an act of faith for which I am grateful.

**TABLE 1**  
**JULIA'S FIRST WORDS IN ENGLISH AND ITALIAN**

<b>ENGLISH</b>		<b>ITALIAN</b>	
<b>Common Nouns</b>	<b>Other</b>	<b>Common Nouns</b>	<b>Other</b>
apple	DaDa	pane (bread)	Fulvio (name)
peas	Virginia	gelato (ice cream)	Giada (name)
juice	down	parmigiano (parmesan cheese)	Federica (name)
cookie	dis	fagioli (beans)	Ianus (family dog)
cheerios	hi	carota (carrot)	Mamma (mommy)
cheese	bye	mandarino (mandarin orange)	Papa (daddy)
bottle	nice	acqua (water)	Marco (name)
ball		frappe (seasonal cookies)	Bruno (name)
blocks		prosciutto (ham)	Papa Giovanni (Pope John's picture)
book		uomo (man)	ancora (again)
doll		bimbi (babies)	va bene (okay)
baby		giacca (jacket)	bello,(beautiful)
car		lana (yarn)	a cuccia (sit down)
tree		naso (nose)	managgia (darn!)
shoes		bocca (mouth)	che schifo (how disgusting)
socks		un altro pezzettino (another little piece)	aspetta (wait)
bellybutton		scarpe (shoes)	ciao (hi & bye)
eyes		asciugamano (towel)	grazie (thanks)
nose			silenzio (hush)
dog			ecco fatto (there, done!)
bear			non piangere (don't cry)
fish			metti a posto (put away)
horse			salute (to your health)
lion			buono (good)
monkey			buongiorno (good morning)
sheep (behbeh)			buona sera (good evening)
rooster (cococo)			arrivederci (goodbye)
			aiuto (help!)
			allora (so now)
			dunque (well then)
			uno, due (numbers from 1 to 10)
			dispettoso (disrespectful!)
			cattiva (naughty)
			guarda (look!)
			sta zitto (shut up)
			piccolo (little)
			piano (quiet, slowly)
			eccomi (here I am!)

**TABLE 2**  
**LEXICAL STATISTICS FOR JULIA**

	<b>13-Month English</b>	<b>20-Month English</b>	<b>20–24-Month Italian</b>
TOTAL	34	290	75
Percent Common Nouns	79%	56.5%	24%
Percent Open Class Nouns, Verbs & Adjectives	82%	87.2%	37.3%
Percent Closed Class	5.8%	7.5%	9%
Percent Verbs in Open Class	0%	17.4%	14%