

## WORD CALLING LEARNING: A TWELVE-YEAR-OLD FEMALE WITH CONGENITAL TEMPORAL LOBE AGENESIS

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This article reports the learning of a 12-year-old female with confirmed congenital brain damage. Precision Teaching was used to teach the student sight words, which were presented in two groups: one small set of eight words and one large set of 24 words. The primary concerns of the study were the rate of learning and the effect of a small and large teaching set on the same.

### Method

#### Participant

N.S., the participant in this study, was the product of a full term pregnancy. She was delivered by Caesarean section, weighing 5 pounds 2 ounces. She spent three days in an incubator. Motor development was normal, however, language was severely delayed. Antagonistic and self-abusive behavior began occurring at one year of age. The self-abuse stopped when her mother quit her job to stay at home with her, but the antagonistic behavior continued. By age four, she used only a few words, exhibiting mostly whining and babbling sounds. She had difficulty relating to other children and preferred to play alone or with imaginary friends.

At the time of the study, N.S. was residing at the Children's Mental Health Unit (CMHU) located on a large state university campus. She had previously been diagnosed as autistic, suffering from an organic brain syndrome, with severe speech and language delay. Prior to her admission to the CMHU, she had been served in public school programs for preschool handicapped, multi-handicapped, and emotionally handicapped/language impaired children. She was referred to CMHU in 1984 by her classroom teacher, who noted that she had regressed in behavior, academics, and speech and language. When N.S. was first admitted to the CMHU in June, 1984, she was extremely aggressive and very difficult to control. For this reason, her academic program was limited and treatment focused on reducing her aggressive and non-compliant behaviors. At the time of admission, she was able to identify ten upper case letters of the alphabet, name the primary colors, and receptively identify body parts.

A CT scan performed in 1984 revealed absence of both the majority of the left temporal lobe and the anterior and medial basal portions of the right temporal lobe. Most of the hippocampus and amygdala were missing bilaterally. Her resulting medical diagnosis was agenesis of the temporal lobes, affecting medial temporal regions bilaterally, with secondary congenital amnesic syndrome, developmental speech and language disorder, and organic personality syndrome.

By March, 1986, she was able to identify all upper case letters of the alphabet and her written name, but she was unable to decode or recognize simple words. At this time, reading instruction was begun using the Distar reading program.

In April 1987 psycho-educational testing revealed strengths in motor skills, visual attention, spacial perception, and rote memory, with weaknesses in auditory memory, reading comprehension, and expressive and receptive language. Her overall developmental age was estimated to be between three and six years below her chronological age.

### **Setting and Time Frame**

All academic instruction was conducted by the teacher in the CMHU classroom, a small, quiet room with one small round table and three student carrels. No more than two students, one teacher, and two teacher-aides were present in the classroom during instruction. The instruction was conducted between October, 1986, and October, 1987.

### **Objectives and Materials**

The sight words used in the study were selected in the context of N.S.'s beginning reading program. All words used in the first phase were Dolch preprimer words. Words that made up the small set were: not, away, little, find, my, blue, lock, make. Words in the large set were: and, a, it, can, two, see, up, red, run, I, is, one, the, we, in, to, three, jump, play, look, help, here, said, go. In the second phase, preprimer and primer words were used. The small set was: big, down, where, for, you, yellow, funny, come. The large set was: like, be, no, am, get, brown, at, eat, but, do, came, are, all, four, black, new, ate, he, did, must, into, now, have, food. Instructional materials included: a countdown timer, teacher-made sight word flashcards, sight word probe sheets, the Standard Celeration Chart, writing paper, pencils, water-based pens, and Language Master cards.

### **Procedure**

In each phase of instruction a small and large set were taught concurrently. The first day of each phase served as the baseline. N.S. was presented with the sight word flashcards from the small set and instructed to "tell me the word". She was also told that she could say "I don't know" if she could not decode the word, and that she should keep trying until the timer indicated one minute had elapsed. She was given no assistance or feedback during this first timing. At the conclusion of the timing, she was presented with the flashcards and the correct verbal response to each, and was required to repeat the response while looking at the word. Four words were then selected from the Dolch list in order of their appearance, and she was required to write each word at least five times while saying the word aloud. These steps were then repeated for the large set.

After the first day of instruction, the sight word activity for each set on each instructional day consisted of three steps: warm-up, timings, and contingent error drill. The warm-up activity included the teacher presenting the flashcards to N.S. and asking "what word?". An incorrect or "I don't know" response was followed by the correct verbal response and the question "what word?". A correct response was followed by praise and repeating the correct response. Cards to which N.S. responded incorrectly were placed in a separate stack. The procedure just described was then repeated with these words.

Following the warm-up, two timings were taken, and the best performance was recorded on the Standard Celeration Chart. Prior to each timing, N.S. was instructed to "read as fast as you can" and to say "I don't know" if she came to a word she could not remember. During the timings the teacher said "good" after a correct response, but would ignore an incorrect one. After each timing the teacher presented N.S. with the words she had read incorrectly and followed the same procedure as described in the warm-up activity. A contingent error drill was then conducted in which N.S. was asked to write each word she had missed during the timings at least five times while saying the word aloud. Additional independent practice was then provided on the Language Master.

After 11 instructional weeks, the small and large sets were presented on probe sheets, rather than flash cards. After an additional 17 weeks for the small set and 18 weeks for the large set, a new phase was implemented, that is, a new set of words were presented.

This sight word instruction was conducted concurrently with a Distar reading program. The instruction, however, was not continuous: each week consisted of 2-4 instructional days, with occasional gaps in instruction from 1-9 weeks. During these gaps, N.S. received no reading instruction or practice in sight word identification.

## Results

Charts 1 and 2 display N.S.'s performance and learning for the small sets, while Charts 3 and 4 display the same for the large sets. In the one year period of time, there were five suspensions of the study due to illnesses, vacations, or holidays. The abscissa of the Standard Celeration Chart has been changed to "days" and does not reflect these suspensions. The initial accuracy in the first phase was 3% for the small set and 11% for the large set. During the second phase, the initial accuracy was 25% for the small set and 33% for the large set. These measures indicate that the large set was slightly easier to do than the small set in both phases. These measures also indicate that both sets were substantially easier to do in the second phase.

Overall celerations for each phase were calculated with the aid of a computer program. Empirical research has shown that celeration values derived from this program are highly correlated with those derived using the quarter-intersect method. In the first phase, the overall celerations for correct and incorrect responses for the small set were  $x1.09$  and  $/1.07$ , respectively. For the large set these values were  $x1.05$  and  $/1.06$ , respectively. In the second phase, the overall celerations for correct and incorrect responses for the small set were  $x1.22$  and  $/1.31$ , respectively. For the large set these values were  $x1.20$  and  $/1.28$ , respectively. While these overall celerations indicate only minor differences in learning between the small and large sets, they do indicate that the rate of learning on both sets was higher during the second phase.

Prior to the change to probe sheets in the first phase, the celerations for correct and incorrect responses were substantially higher for the small set. In addition, the error frequency was "zero" per minute for the small set and six per minute for the large set, indicating that the small set was initially easier to learn. By the end of the first phase, however, the performance on both sets was nearly identical, 85 words correct per minute with "zero" errors. Prior to the same change in the second phase, the celerations for correct and error responses were nearly the same for both sets. At the end of this phase, the frequencies for both sets were again almost identical, 65-70 words correct per minute with 0-2 errors.

## Discussion

These data suggest that a young girl with significant brain damage can learn to read large sets of words at nearly the same rate as comparable sets only one-third as large. The data also suggest that the rate of learning may increase with new sets. This should send out a message to many teachers who are hesitant to use large sets with normal or mildly handicapped children.

During this year long instructional program, the teacher was continuously reinforced by the charted data. When the teacher was able to see the small



DAILY BEHAVIOR CHART (DCM-9EN)  
 6 CYCLE-140 DAYS (20 WKS)  
 BEHAVIOR RESEARCH CO.  
 BOX 3351-KANSAS CITY, KANS 66103

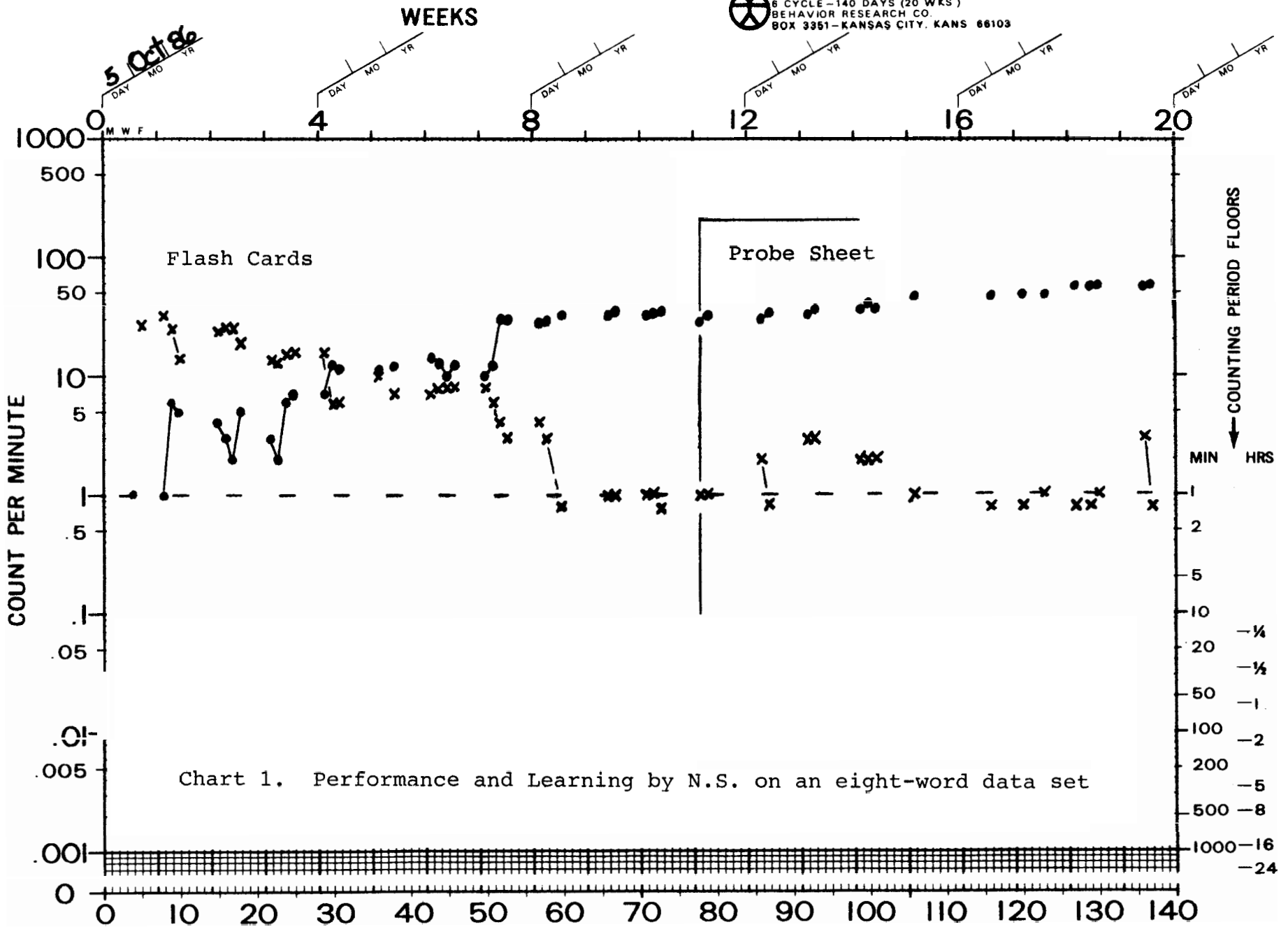
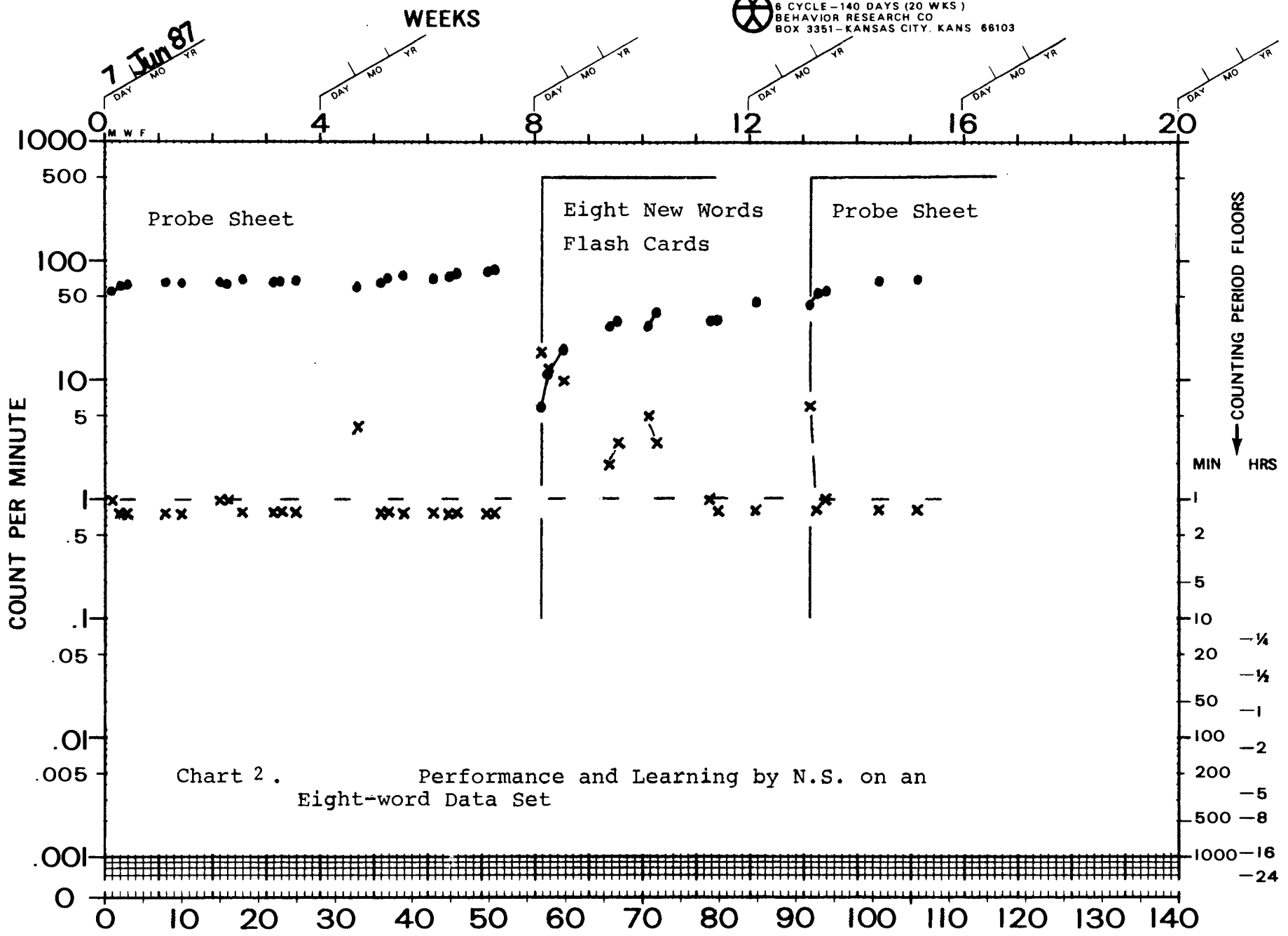


Chart 1. Performance and Learning by N.S. on an eight-word data set

Wolking      Roberson ADVISER      MANAGER			DAYS			N.S.	12	see-say words
SUPERVISOR						BEHAVIOR	AGE	COUNTED
AGENCY			TIMER			CHARTER	small set (8 words)	

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SUPERVISOR: \_\_\_\_\_  
 ADVISER: Wolking  
 MANAGER: Roberson  
 AGENCY: \_\_\_\_\_  
 TIMER: \_\_\_\_\_  
 COUNTER: \_\_\_\_\_  
 CHARTER: \_\_\_\_\_  
 BEHAVIOR: N.S.  
 AGE: 12  
 COUNTED: see-say words small set (8 words)



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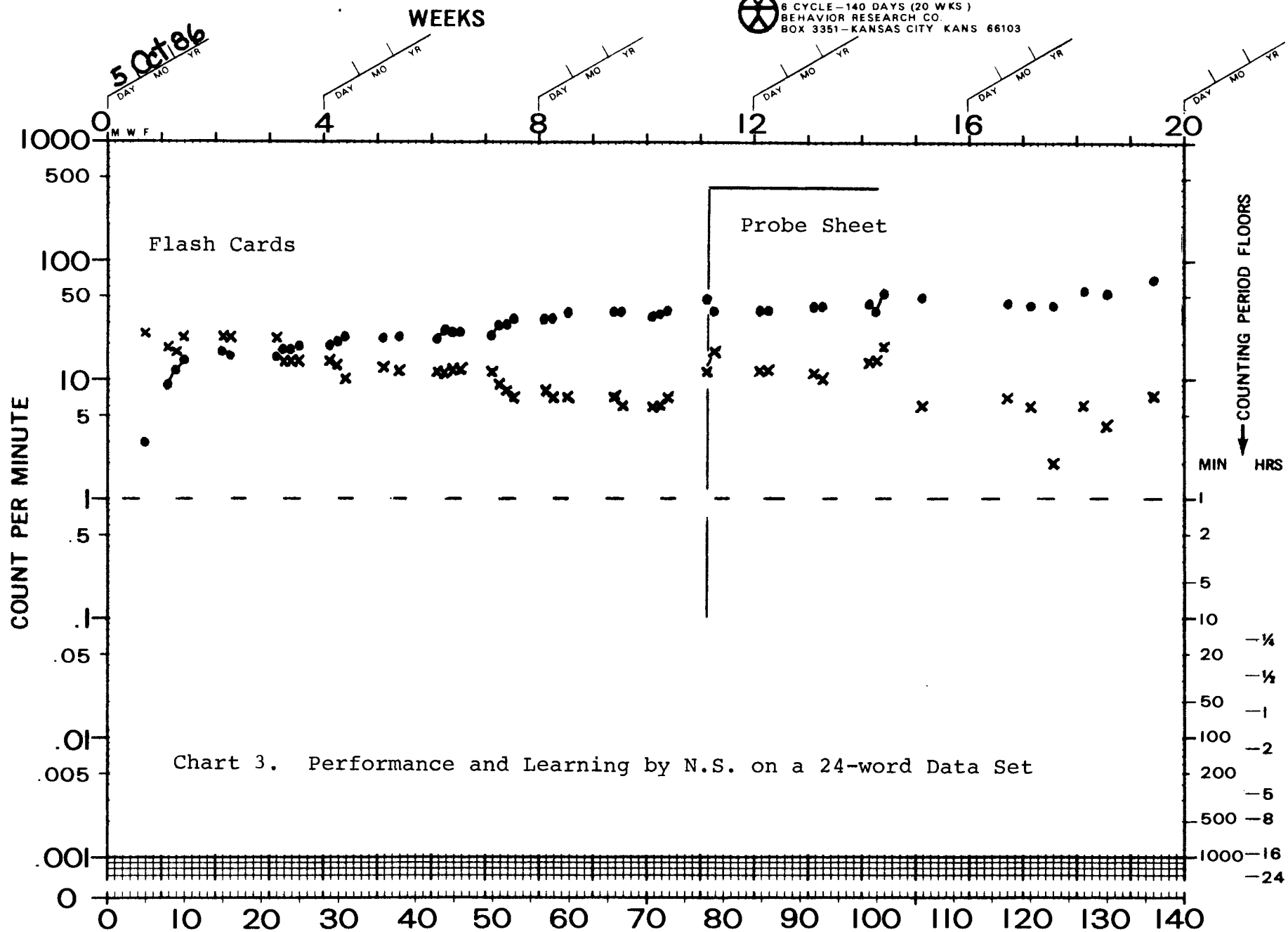
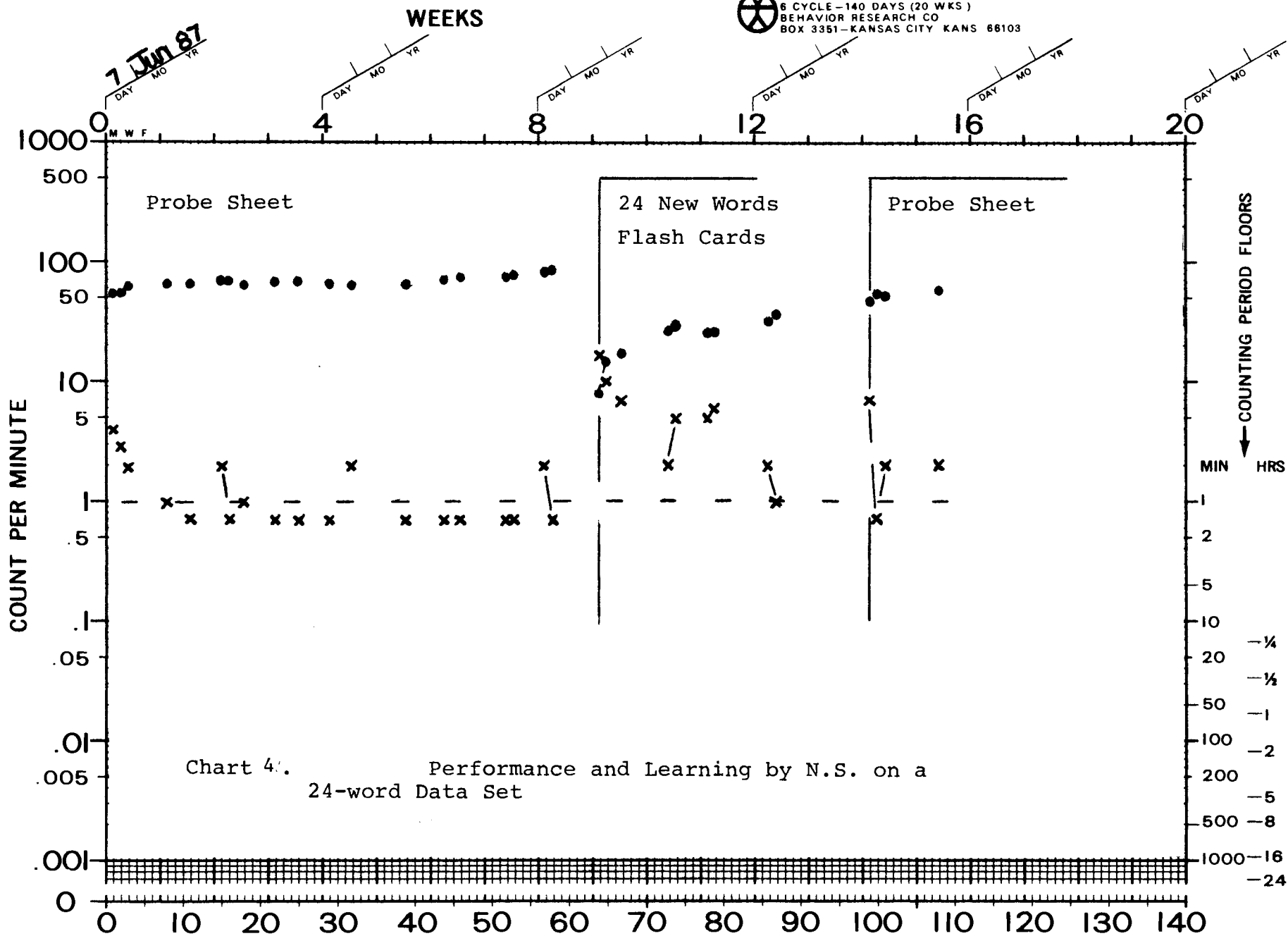


Chart 3. Performance and Learning by N.S. on a 24-word Data Set

Wolking			Roberson			N.S.			12			see-say words		
SUPERVISOR			ADVISER			BEHAVIOR			AGE			COUNTED		
AGENCY			TIMER			CHARTER			large set (24 words)					



Wolking		Roberson	N.S.		12	see-say words
SUPERVISOR	ADVISER	MANAGER	BEHAVIOR	AGE		COUNTED
AGENCY			TIMER	COUNTER	large set (24 words)	
				CHARTER		

growth from day to day and week to week within the long first phase, it was enough to keep her working with N.S. toward the aim. If the teacher had given up, she would never have seen that N.S. could learn at an even more rapid rate.

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## PRECISION TEACHING: FEELING FIXER

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The purpose of this article is to demonstrate that, by counting your inner feelings (i.e., positive and negative), you can become more aware of events which affect these feelings, discover things about yourself, and develop strategies to help change them.

I began charting my inners on November 29, 1981, after reading an article by Abigail Calkin (1981). I defined inners as those feelings that affected me "very" positively or "very" negatively. "Very" is difficult to define; some examples might be helpful. For instance, consequent feelings from a funny movie would not necessarily be counted as "positive". If I saw a person do a kind deed, however, I might count that as a "positive". Similarly, the fact that I do not like a certain political policy (e.g., tax loop holes) might not be counted as a "negative". If I heard about an

80-year-old woman getting mugged and raped, however, that might be counted as a "negative". This is something I really appreciate about PT-- it respects the learner enough to allow him/her to define an inner according to his/her own unique criteria.

Chart 1 is my feelings chart. Data from the following days helped me learn, discover, and change:

1- July 10: I helped my friend with his going-out-of-business garage sale; there was a jump-up in positives;

2- July 18: We closed on our new house and the buyer's loan for our old house was approved; there was another jump-up in positives;

3- July 21: We took possession of our new house and started moving by car-loads; there was a jump-up in positives;

4- July 22: The moving men came and we also moved by car-loads; I was happy we were moving, but I was also sad to leave the house where we lived for 13 years and where we had had much fun; there was a jump-up in both positives and negatives;

5- July 23-25: I went to our old home to clean and get it ready for the new owners; I experienced sad feelings and decided to use the following strategy: whenever I experienced a sad feeling about the old home, I would think of why I was moving to the new house (e.g., more space, less maintenance, etc.); this made me feel happy; notice the "jaws" learning picture-- an acceleration in positives and a deceleration in negatives; in fact, I started generating positive thoughts about the new house, which produced positive feelings in me; as a result, the positive thoughts were not