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AIM*STAR WARS

[Setting AIMS that COMPETE]

Owen R. White
University of Washington

Episode II: Return of the Learner

In Part I of this serial we made friends with young Eric, Learner Knight, and followed the exploits of Uncle Owen as he struggled to discover the secret of the Learner Force that Eric had mastered. Owen had decided that aims should allow a learner to (A)dvance to a level of (I)ndependence with a skill and

(M)aintain the skill over time at a level which will provide a (S)ervice of value to the learner. You will recall also that Ruth Mundt discovered the true meaning of AIMS from her pupil Patsy, along with the fact that "normal is not always nice." Patsy, in turn, had used the Learner Force to reach superfluency in her see/say sounds, defeating forever the ghost of speech problems which had plagued her even when she had embraced normal fluency in saying her sounds correctly. The monstrous Normie Deathstar had been defeated.

In this episode we will probe deeper into the Learner Force in an attempt to discover just why Patsy needed her superfluency. Uncle Owen will try to keep up, hoping to learn how the possible need for superfluency might be predicted before a program begins.

The key, as you may recall from the previous episode, lies somewhere in the notion that a learner's peers might not be the only source of competition.

Other Behaviors in the Learner's Repertoire

Patsy already had a way of speaking. It was not entirely correct, but it worked. People generally understood her, and most were kind enough not to draw attention to her problem. The skill which Ruth wanted to develop in Patsy was in direct competition with Patsy's existing behaviors-- behaviors which had been in Patsy's repertoire and practiced for several years. Had a formal assessment been made of the frequency with which Patsy could say the sounds incorrectly, it might have revealed that she was at the "right frequency" but with the "wrong behavior." When Patsy was specifically directed to form the sounds(during instruction), she was able to do so. When she was not specifically directed to speak correctly(outside instruction), she did what was easiest and most efficient for her to do-- she said the sounds incorrectly. In retrospect, it makes sense that Ruth would eventually have to set an aim that competed effectively with that old behavior pattern-- an aim that made it much easier for Patsy to speak correctly than incorrectly.

Similar situations abound in education. It is often the case that we are trying to provide learners with alternatives to old skills. In most cases our alternatives will prove much more useful "in the long run," but, from the learner's perspective, the new skills we have to offer are just harder ways(for now, at least) to do old things. An "add fact" is not simply another way of

counting. Simply saying, "10" as the answer to "3+7" in a single step is much more efficient(in the long run) than having to count 3 objects or dots, 7 objects or dots, and then counting them as a whole group to get the answer. However, when we first present addition to the learner, basic counting strategies are likely to be much more efficient than our alternative. Which do you think will "win out?" What do you suppose the absolute minimum aim for add facts should be? How fast can the learner count? To gain reasonable confidence that we can really beat the competition and break old habits, it would probably be wise to set the absolute minimum aim at a frequency equal to at least twice the frequency with which the learner can count.

What would be a minimum frequency aim for eating with a spoon? How fast can the learner eat without a spoon?

What would be a minimum frequency aim for typing? How fast can the learner write or print?

With a little thought, it is often possible to identify competing behaviors which are already in the learner's repertoire. By assessing the fluency of those behaviors(and multiplying by 2), it should be possible to estimate reasonable minimum performance aims for the new skills we wish to teach. Once the learner achieves that frequency aim, it should be much easier to use the new skill than the old alternative. That, in turn, should encourage the child to use the new skill whenever it is appropriate. This should lead to even more practice and greater fluency.

This aim strategy may not always be sufficient. It is probably wise to extend the concept of "competition with own behavior" to a consideration for possible "future behavioral alternatives." For example, the learner may count rather slowly, so doubling that frequency to set an aim for basic math skills may still result in a relatively low aim. That may be acceptable for initial "transition to the new skill" ("abandonment of old habits"), but it may not compete effectively with alternatives, such as calculators, which could be made available to the learner later.

As noted earlier(Horton, in progress), most adults really won't use basic math fact skills. They turn to what, for them, is a much more efficient alternative-- pushing buttons on a calculator. Even if that alternative is not actually available to the

young learner, it might be a good idea to prepare for the day when it is. "Competent button-pushing adults" could be assessed to determine their fluency in solving simple (below fourth-grade) math problems. That fluency could be used as the minimal aim for our learner's "see/say" behaviors. Then, if one really wanted to shoot for the aim-stars, "adult button-pushing frequencies" for much more complex problems (47 column, 200 term addition of square roots?) could be used as the maximum aim. We would work with the learner until at least the minimum aim was reached, and keep working beyond that point until the learner either went flat or reached the maximum aim.

"Beating the less desirable alternatives" can be a very useful strategy for establishing individualized performance aims. There are times, however, when "beating" is really not the issue. There are at least some times when it is more important to simply "meet" the competition and put various behaviors within the learner's repertoire into better balance. Chris' hopping program (see Charts 2, 3, and 4) provides a good example.

Chris wasn't a physically handicapped child, but he was clumsy enough to become one if something wasn't done. He was constantly tripping over his own feet, falling down, and generally banging himself up something fierce. Ms. Travato could have implemented a standard "takes steps without destroying himself" program, but decided instead to look more carefully at Chris' individual behaviors. After a brief inventory (Chart 2), it became obvious that Chris had a problem with the strength and/or agility of his left leg. What should the teacher do? Should she build strength and agility in using the left leg? What aim should be used? Normal folk of Chris' age hop in the range of 40 to 150 per minute (Rae-Johnson, personal communication, 1979)—much better than Chris even with his strong leg. Ms. Travato could have set those normal fluencies as her aim, but wisely decided to use Chris' own behavior for at least a starting point. She used Chris' right leg performance as the aim for his left leg. Following a brief but very interesting program, the aim was reached (see Chart 3). To make sure that her standard of comparison wasn't changing, she also monitored the right leg. By the end of the program, right and left leg frequencies are virtually identical (hold Charts 3 and 4 up to the light). Chris is still less than "normal," but he's in balance. Is he still tripping? Tripping the light fantastic would be more like it. He moves with the grace of a gazelle (well, perhaps not quite), and

undoubtedly is now considering defection to the U.S.S.R. (United Soviet Star Republic) to make up for all the ballet artists we've gotten from them.

Sometimes we may need to use Normie standards. It seems reasonable, however, in many cases to simply try and beat less desirable alternatives in the child's own repertoire, or to bring different behaviors in the child's repertoire into better balance. Put faith in the Learner Force.

Unfortunately, there are still a few types of competition to be considered. Learners are not always masters of their own destinies, as Uncle Owen will discover in the next episode.

Episode III: The Normie Empire Strikes Back

In the First episode, "The Deathstar," Uncle Owen reviewed several methods for establishing performance aims and begrudgingly admitted that there may be times when Normie standards are useful. However, we also learned from Patsy, a Learner Rebel, that for an aim to facilitate (A)dvancement to a level of (I)ndependence and (M)aintenance which will provide a (S)ervice for the learner, it is sometimes necessary to become superfluent — achieve a level of performance much higher than Normies. In the last episode, "Return of the Learner," Uncle Owen considered Learner Rebel Patsy's need for superfluency and concluded that she had to be much better than Normies in saying sounds correctly in order to "beat" her old and fluent habit of saying the sounds incorrectly. We also met Chris who, unlike Patsy, only needed to bring the fluency with which he was able to use each leg into better balance in order to overcome a problem with tripping. Chris' aim for the "poor leg" was lower than that for a Normie, but it did match his "good leg," and solved his immediate problem with tripping. In both cases, the issue was one of competing with one's OWN behavioral alternatives or fluencies, not the standards so often imposed by the evil Normie Empire.

In this episode we will follow Uncle Owen's struggle and learn how the Normie Empire often responds to the idea of rejecting its standards. There is, it seems, another Deathstar.

Manager Expectations and Patience

Thus far, adults and peers have been considered only as models of competent performance. In addition to representing abstract standards of comparison, peers and adults often assume the role of "manager" and

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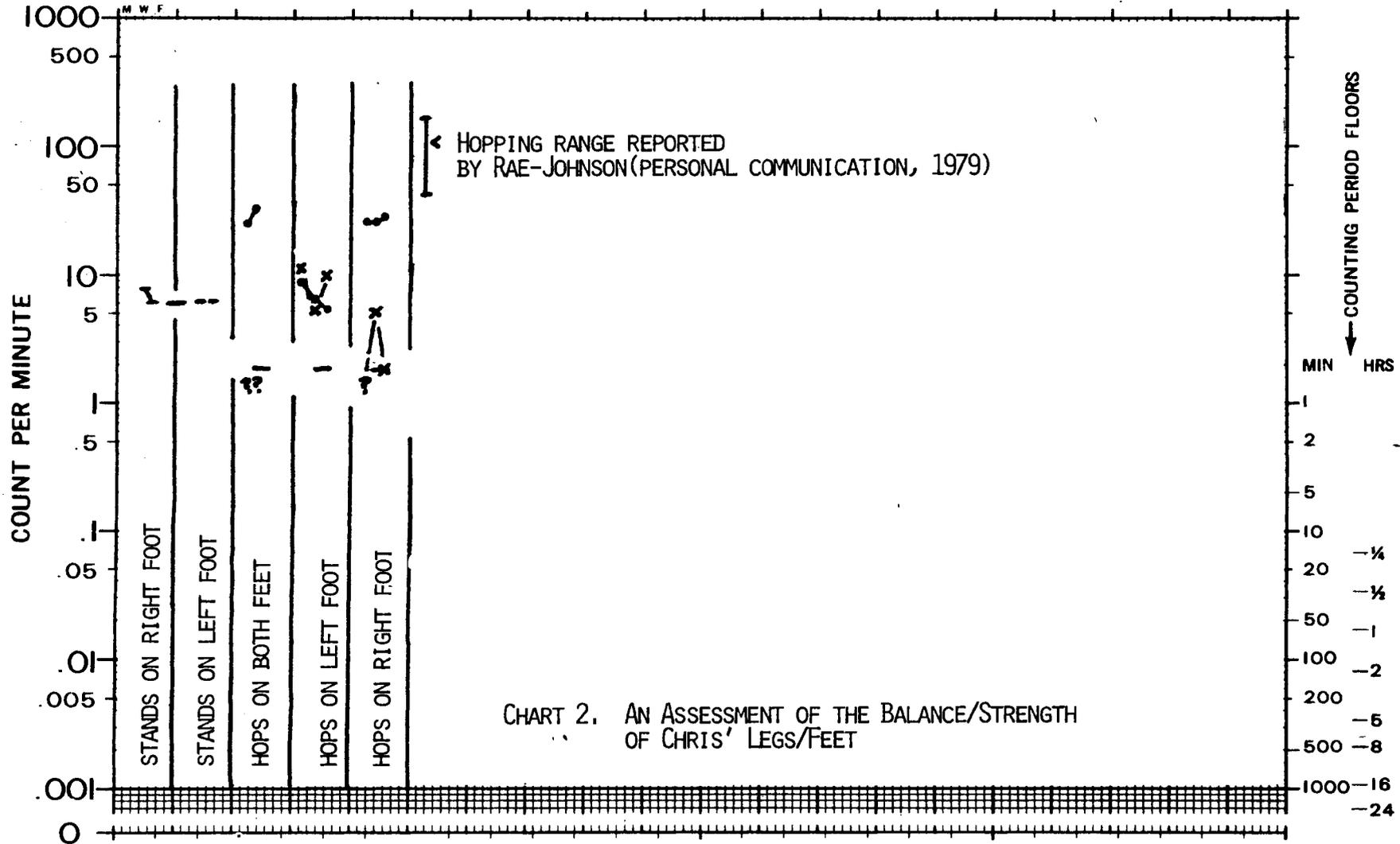


CHART 2. AN ASSESSMENT OF THE BALANCE/STRENGTH OF CHRIS' LEGS/FEET

TRAVATO			CALENDAR DAYS			CHRIS	6		STANDS/HOPS
SUPERVISOR	ADVISER	MANAGER				BEHAVIOR	AGE	LABEL	COUNTED
DEPOSITOR	AGENCY	TIMER	COUNTER	CHARTER					

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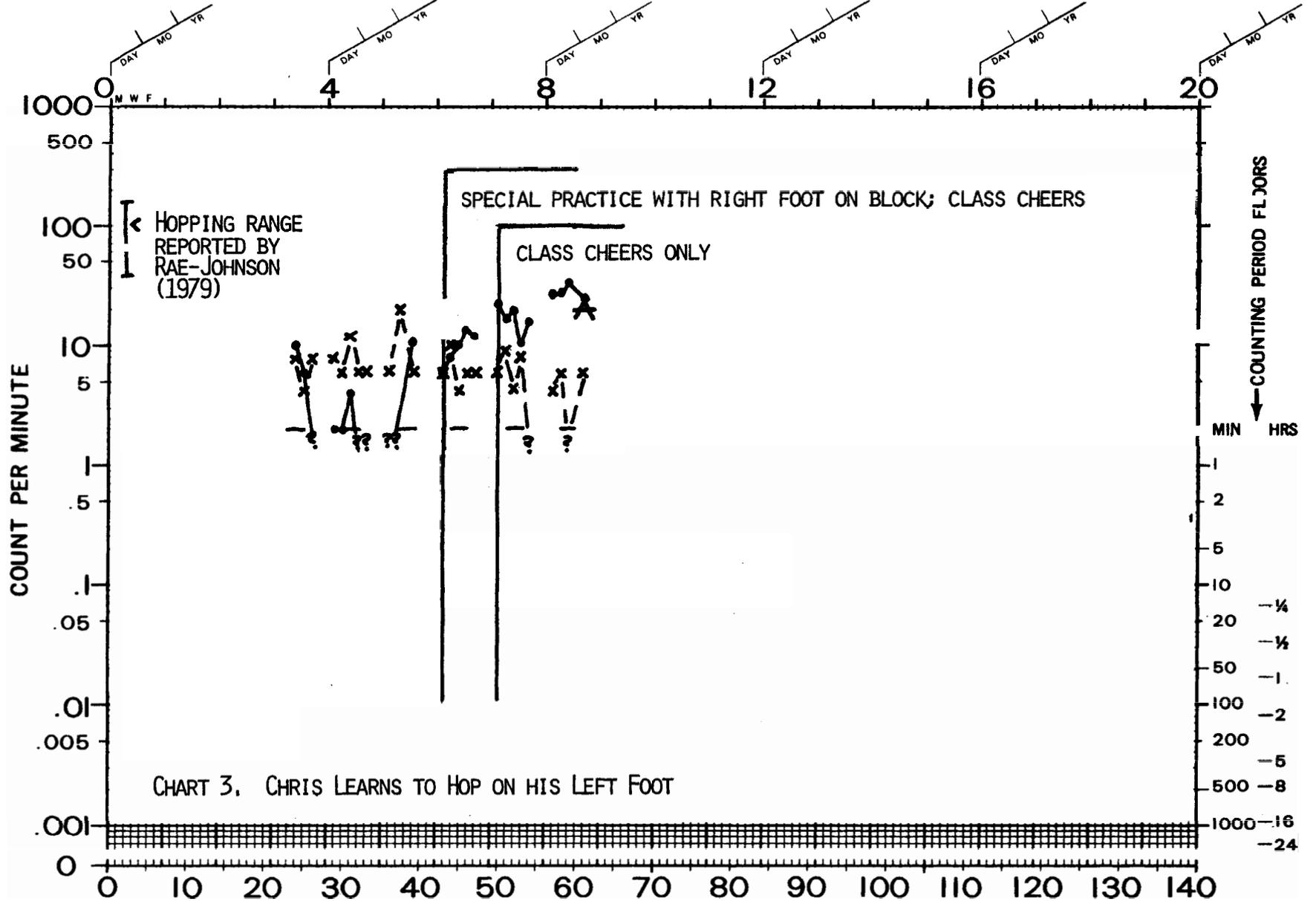


CHART 3. CHRIS LEARNS TO HOP ON HIS LEFT FOOT

TRAVATO			SUCCESSIVE CALENDAR DAYS		CHRIS	6	HOPS ON LEFT FOOT/ RIGHT FOOT TOUCHES GROUND	
SUPERVISOR	ADVISER	MANAGER			BEHAVIOR	AGE	LABEL	COUNTED
DEPOSITOR	AGENCY		TIMER	COUNTER	CHARTER			

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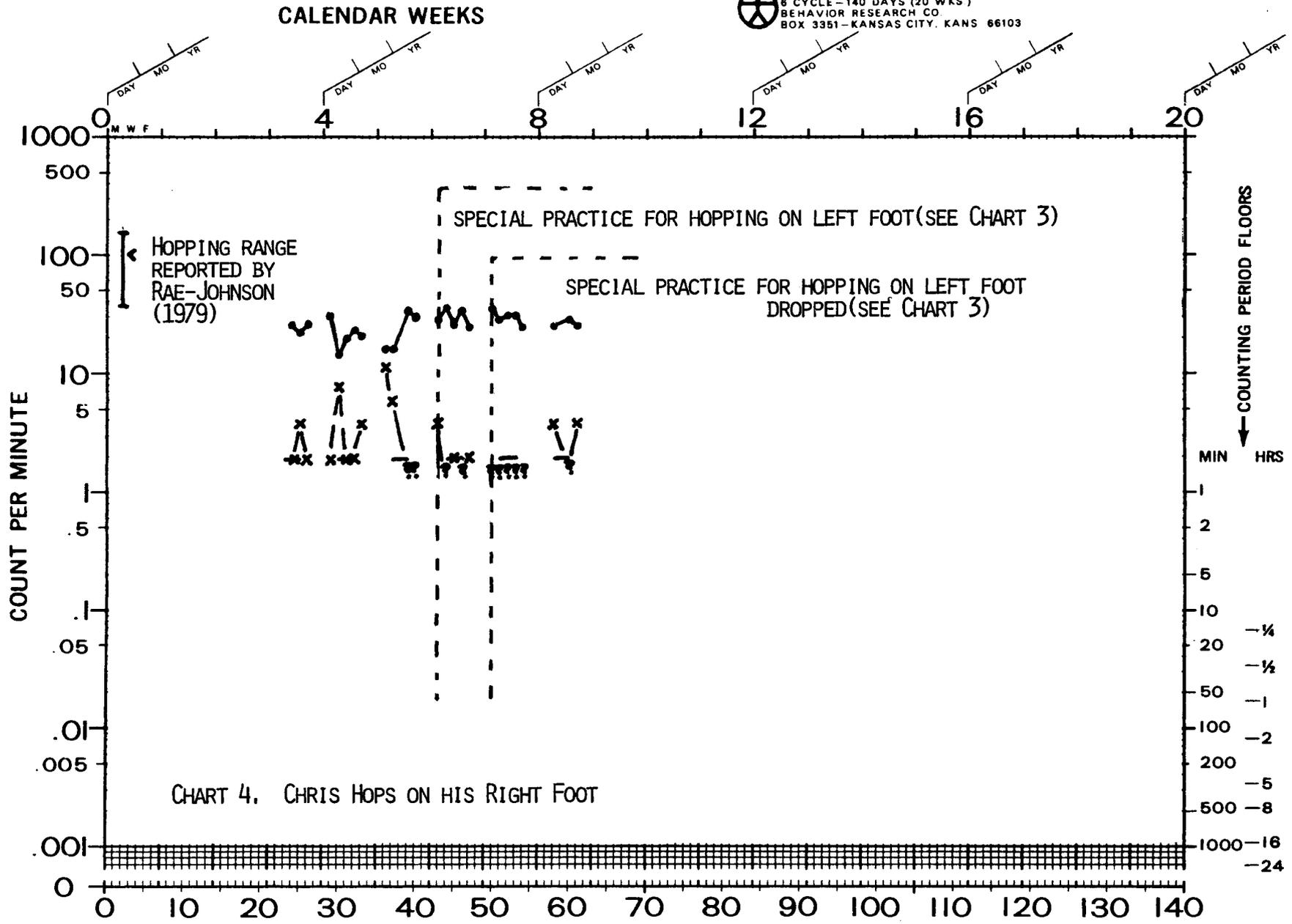


CHART 4. CHRIS HOPS ON HIS RIGHT FOOT

TRAVATO			SUCCESSIVE CALENDAR DAYS				CHRIS		HOPS ON RIGHT FOOT/	
SUPERVISOR	ADVISER	MANAGER					BEHAVIOR	AGE	LABEL	COUNTED
							LEFT FOOT TOUCHES GROUND			
DEPOSITOR	AGENCY		TIMER	COUNTER			CHARTER			

determine the extent to which the learner is given the opportunity to use a skill.

One possible role of a manager is to "do for the learner if the learner does not do for him/herself." An infant's parent will provide for dressing, feeding, locomotion and virtually all of the infant's needs. The parent relinquishes control over such chores as the infant grows older and more competent, but often the transfer of control is slower than necessary.

I am the father of two fine young sons (Shaffer the Super and Heston the Hero) who are Learner Rebels. Both are quite capable of dressing independently (albeit, socks and shoes are a toss-up). However, they dress themselves only when I allow it. On weekdays, when I must rise early, take them to preschool and get off to work myself, I usually assist them through most of the dressing routine. I am impatient as a manager. I do not want to rise forty minutes earlier to allow the boys sufficient time to do everything themselves. I am selfish. I am not unusual. The boys and I do have "dressing races," when time allows, and they are becoming more fluent. Someday, when they can beat my time, I will allow them to do what they can already do.

What is the minimum fluency aim for dressing? How fast can the manager dress the learner? (Multiply the manager's frequency by 1.5 or 2.0 just to make sure.)

What is the minimum fluency aim for eating? How fast can the manager feed the child? How long does it take the manager to clean up if the child does it alone? (Put both those times together, increase the frequency by a factor of 1.5 to 2.0 to be on the safe side.)

What are the minimum fluency and endurance aims for walking? How fast does the manager walk with a normal stride? How far does the manager want to walk on most occasions? (Don't increase those standards by any factor. You might even decrease them a bit. After all, the alternative is that the manager has to carry the child, unless there is a stroller or wheelchair lurking in the background.)

What are the minimum fluency and intelligibility standards for talking? How long are most managers willing to wait before they begin to try and "guess" what the child is saying? (Increase the standard to provide a safe margin.)

If the learner exceeds the limits of the manager's patience, then the learner will not be afforded the opportunity to practice the skill, even if the learner is otherwise basically "competent." That, in turn, will lead to disuse of the skill, possibly a reduction in competence, and the skill will either not be incorporated into the learner's regular behavioral repertoire (outside instruction) or will be integrated into that repertoire much more slowly than would otherwise be possible.

Managerial patience is often tied to the age of the learner. Imagine a very young child approaching a stranger on the street (under the careful gaze of the child's parent) and saying, "...hi-eeee...da-da..." More often than not, the stranger will smile, pat the child on the head, and struggle to decipher the child's next utterances. Put the same dysfluent verbal behaviors into the body of a severely handicapped young adult. The stranger turns hurriedly away and pretends not to notice. The very young child is engaging in age appropriate behavior which, while dysfluent, is likely to be reinforced. The older individual fails to meet minimal age expectations and is consequated in a way which is likely to lead to a deceleration of the newly emerging skill.

The idea that a skill should be "age appropriate" has been well advanced, especially in the literature concerning the education of severely handicapped learners. More often than not, the concept is reduced to an important, but rather vague notion of "human dignity"—learners should not be taught things which will make them stand out as "behaviorally immature." As illustrated above, however, the value in learning age appropriate behaviors and fluency has very practical implications as well.

Other learner attributes may also affect a potential manager's expectations. Most people will wait patiently for a person with obvious physical disabilities (chronic or temporary) to maneuver into an elevator. Put the same slow gait into the body of an obviously healthy child and people quickly lose patience with the "dawdling." Similarly, most parents are quite supportive when their child has an occasional "accident" while eating, but are much quicker to lose their patience with the child who consistently spills milk or drops food on the floor.

Managerial expectations are of special significance when trying to "mainstream" a learner, that is, when trying to more fully

integrate a handicapped learner into an environment populated primarily by nonhandicapped learners.] On the one hand, a "regular teacher" is likely to have a host of expectations developed over the years on the basis of interactions with nonhandicapped learners. The time allowed for certain activities(e.g., reading an assignment, completing math worksheets) may be unrealistic for the handicapped learner who has not already been brought to a level of fluency commensurate with Normie standards. On the other hand, many teachers who have not worked with the "handicapped" hold unrealistically low performance expectations and will make counter-productive concessions to the mainstreamed child. The mainstreamed child may be given much more time than is necessary to complete assignments, assignments might be "watered down," and the curriculum excised of all challenge and significance.

Aside from rather specific expectations based on a learner's age, obvious physical attributes, or "history," the most important variable in determining a manager's patience is likely to be time. It might not be the fluency(or dysfluency) with which the learner attempts to demonstrate the skill that is critical, but rather the time which the manager must invest in order to permit the learner to demonstrate the skill. The fact that it might take my sons thirty or forty minutes to dress is not the problem, it is the fact that I must rise early enough to prompt them to begin, and keep popping back to prompt them to continue that is a problem. In most cases it is unreasonable to expect a manager to invest more than a few extra seconds(all at once, or spread out over a much longer period) to allow a learner the opportunity to perform a skill.

Counterbalancing the investment of time, in at least some cases, is a potential savings in the energy or work which a manager might have to expend if the learner does not perform the skill. As mentioned earlier, for example, a manager might allow a very young child to walk independently even if it takes longer to get somewhere. The alternative is usually the much more effortful task of carrying the child. Similarly, a parent might be more inclined to put up with a child's slow eating behavior if it means that the parent is free of the task of scooping the food for the child every few seconds (interfering with the parent's own eating). If allowing the learner to practice a skill means an increase in the manager's workload, on the other hand, patience is much more likely to wear thin. Being free of the task of scooping the child's food is of little

value if the task of cleaning up after the meal becomes much more involved; putting the learner into easily removed "big boy pants" instead of diapers to allow the practice of independent toileting may try the manager's patience if the more effortful task of cleaning up "accidents" without diapers is too frequent.

Finally, the importance of all the factors outlined above— expectations, time and effort— can be altered significantly by two additional concerns: other demands placed upon the manager, and the subjective "worth" of the learner's attempts to demonstrate and develop the skill. At times a parent may be willing to slow down and allow the child to toddle along, at other times it will be necessary to reach some destination quickly and the parent will carry the child. At times I am willing to allow my children to dress themselves. At other times I must get to work quickly and cannot afford the luxury. Parents and teachers might place a high value on the development of new skills in their children and be willing to put up with initial dysfluency. Other potential managers in the learner's world are less likely to be as tolerant.

So, it would seem, it is not always possible to completely ignore the standards of the Normie Empire. While other standards may bring a learner to a level where the skill is of personal use and importance, Normie Commander Managers in the learner's world will still often have the power to determine whether the learner is allowed the opportunity to practice and use a skill. We may rely to a certain extent on the good will of some managers(especially parents and teachers) to perceive dysfluent approximations of a skill to be of significant worth, but even the most benevolent of managers will often have unrealistic expectations or special demands on their time. We must set our aims high enough to ensure that other people in the Learner's world will ALLOW the skill to be demonstrated. That means that the skill and fluency with which it is demonstrated must be:

[A]ge appropriate or otherwise expected; take only a
[L]ittle of the manager's time or
[L]essen the manager's own workload and not conflict with
[O]ther demands on the manager's time...OR...it must be of special
[W]orth to the manager.

The well meaning (but often evil) Normie Empire may strike back at the Learner Rebel,

prohibiting or discouraging the demonstration of skills within the Learner's repertoire. There is another Deathstar protected by the forcefield of limited manager patience and competitive demands. If Learner Knights are to defeat that system, they must attend to Normie expectations and the demands placed on the managers themselves. There is hope! With a little nudge, the power of that forcefield can sometimes be turned from the Dark Side. The saga of Learner Rebel Paul shows the way.

Paul would not have been welcome at Princess Learna's table. He grabbed for food in a most unseemly manner. In last year's class he had been taught to ask for the food he wanted in a more appropriate manner (by pointing, since he was nonvocal), but the new behavior failed to generalize and maintain. This is a common story. Handicapped learners are "noted for their forgetfulness." However, what if the desired behavior was still really there, lying dormant beneath the concealing blanket of an older, more fluent behavioral alternative? We might try to increase the fluency of the pointing responses so it could compete more effectively with grabbing. However, when you get right down to it, what could be quicker than simply grabbing what you want? What if we made the old behavior pattern less useful? What if we unleashed the power of the inhibiting manager forcefield on the grabbing response? Charts 5 and 6 tell the story.

In the first few days of Paul's program he never pointed to the food he wanted, he just grabbed. Learner Knight Billingsley (in progress) and Laura Dickenson (Paul's manager) then decided to put a forcefield around the grabbing behavior during lunch time. No "instruction" was provided— Paul was never told or shown what he should do (after all, he had been taught all that a year ago), he was only prevented from getting the food he tried to grab. After a few confused days (see Chart 5), the light of the good side of the Learner Force shone through and Paul began to consistently point to the food he wanted with the same fluency he used to display in grabbing food.

Snack time was another matter (see Chart 6). Encouraged by success in one setting, the forcefield was turned against grabbing during snack time. The desired behavior appeared almost immediately, without specific instruction, just by preventing the old behavior from being effective.

With a minimum of effort, the power of that Normie villain Decel-Vader that lurks in all managers can be turned from the Dark Side.

The mask can be ripped away, revealing the caring Learner Knight and unveiling the true power of the Learner Force that lies within the frequencies of all Learner Rebels.

In the next episode, "Scouts, Flankers and Rear Guard," Uncle Owen returns to the question of aims which will allow the Learner Rebels to advance quickly through the curriculum.

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About PT

AN ANNOUNCEMENT

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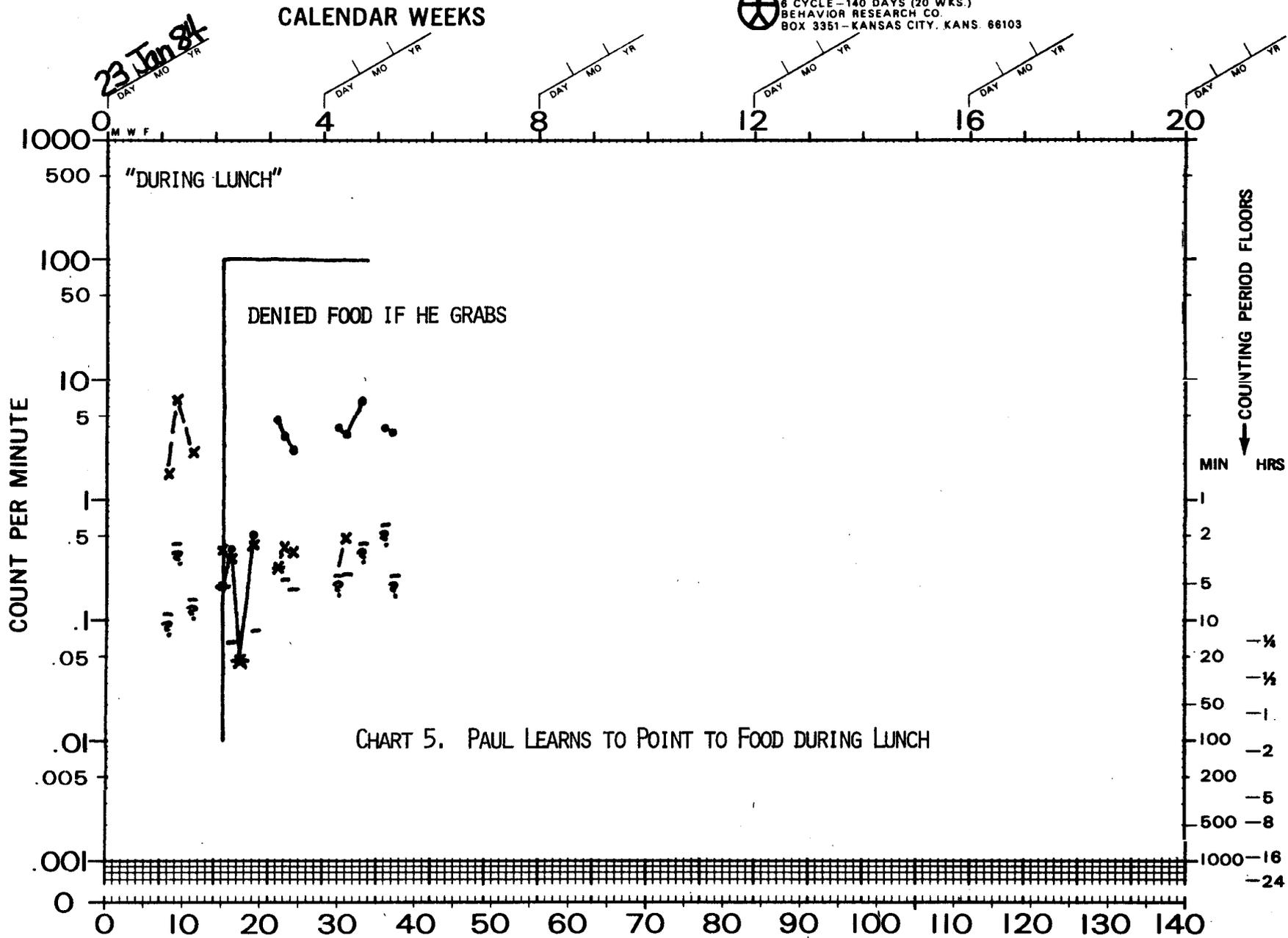
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POINTS TO/
GRABS FOOD

BILLINGSLEY SUPERVISOR			DICKINSON ADVISER			MANAGER			PAUL	8		
									BEHAVIOR	AGE	LABEL	COUNTED
DEPOSITOR			AGENCY			TIMER			COUNTER			CHARTER

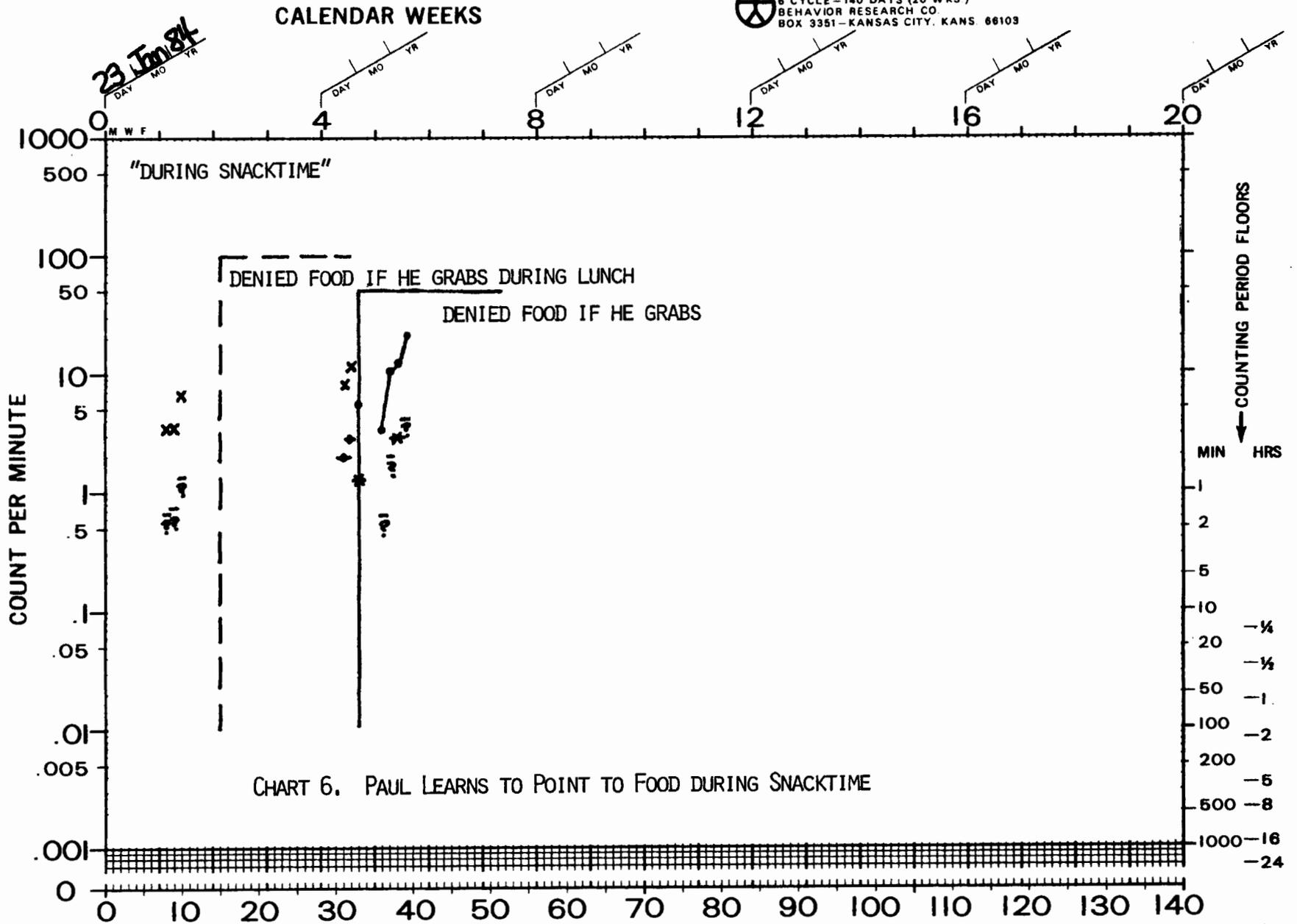


CHART 6. PAUL LEARNS TO POINT TO FOOD DURING SNACKTIME

	BILLINGSLEY	DICKINSON	SUCCESSIVE CALENDAR DAYS	PAUL	8		POINTS TO/GRABS FOOD
SUPERVISOR	ADVISER	MANAGER		BEHAVIOR	AGE	LABEL	COUNTED
DEPOSITOR	AGENCY		TIMER	COUNTER	CHARTER		