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REPORTS

THE STRANGE WORLD OF
DEAR ACKIE

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DEAR ACKIE

Ed.: For those who are new to **SSW REPORTS**, *Dear Ackie is our version of Dear Abby. People write in to Ackie for her advice and counsel. Despite her sassy and conceited manner, she does know a lot about the SSW (I will grant her that). We tried to replace her when she was on vacation, but no one was willing to work for so little money. So you get what you pay for.*

Dear Loyal and Admiring Friends:

It's amazing how much I have to put up with from the editor. But he's paying the big bucks so I keep my humble mouth shut. You know with my great reputation I've gotten many offers, but still I'd rather work for money. Enough of my problems, lets take a look at the mail.

BY EMAIL

Dear Ackie,

I am an audiologist who has been performing CAP tests with children for over 10 years. I love the SSW and subscribe to **SSW REPORTS**, but have never attended an SSW Workshop [Ackie would say 2 out of 3 ain't bad, but my boss wants me to say ***that can be rectified***]. I have been using the NOE scoring system since it was introduced in the newsletter and find it easy to use, especially with my population.

My concern is that recently children who were seen by other audiologists have been referred to me for re-evaluation. In reading their reports, I see they obtain percent *correct* (I assume) and just for the Right-Competing and Left-Competing conditions. For example, one quoted the 8 year old norm as 80% for RC and 70% for LC and these were the only measures they used to assess SSW performance!

I have looked high and low and have not been able to find any normative data in which the SSW is expressed in percent correct. Am I missing the boat here??? Ackie, can you give me some guidance as I am beginning to doubt my scoring techniques. I seem to be the only person in my state to use the NOE and utilize qualifiers to gather additional information about the children.

Harriet Carter

Dear Harriet:

You have come to the right person for help. After all, this is what Ackie does

best (it's actually all that Ackie does, I don't drink/smoke, I just sit here and give advice).

It is a pleasure to hear such nice feedback about your advanced use of the SSW. You didn't say *why* the patients have come to you for the re-evaluation when they were seen by other audiologists originally. I wonder if possibly you have a reputation for doing a thorough job in working up children with CAP problems. Is it possible that they were not pleased with the manner of testing or perhaps the lack of information the audiologists were able to give? It wouldn't surprise me [of course, nothing surprises Ackie, I've seen it all Harriet].

I don't like to quote my boss, but I must say he was right when he said, *God Bless America.* We live in a free country and people can do just about anything, short of damaging a patient and they won't go to jail. That's the way it should be. There are many ways to practice a profession. While I think people who take such shortcuts are providing a fraction of what they might, I can't say that they are not doing a service for the patients, but it surely is less than what you are offering.

Many people have not made the investment in the SSW that you have, so they don't realize how much there is to offer the patient and his or her family.

I don't know of any normative studies that have looked at the SSW in the way you described, but well respected audiologists have published SSW data using the competing conditions only and uncorrected to be consistent with the rest of their test batteries. They often run a normal control group for comparison purposes. It is perhaps these data with which your colleagues have compared their clinical findings.

Most audiologists have not had much CAP training in their graduate programs. So when they get out they have to educate themselves. It is those of us who know more who need to help out those people.

SSW ON CD?

Dear Ackie:

When will the SSW be available on CD? Soon we hope!

Gail Whitelaw

Thanks for your question Gail. I made a call directly to Precision Acoustics [using their elusive phone number **(360) 892-9367**] and spoke directly to Dr. Al Hicks, President of the company.

Ackie: Dr. Hicks my readership wants to know if you are really working on an SSW CD or not.

Dr. Hicks: Yes.

Ackie: How close are you to completing the CD and making them available?

Dr. Hicks: Pretty close.

Ackie: How close?

Dr. Hicks: One month.

Ackie: JUST ONE MONTH! JUST ONE MONTH??!!

Dr. Hicks: Yep.

*Ed.: Please see the review of the **Central Test Battery** CD on page 6.*

FOUR FOR THE PRICE OF ONE

Dear Ackie:

What can you tell us about (1) Engineer's Reversals, (2) the present status

of Type A, and (3) the relationship between the SSW and Tallal's research. In addition, (4) can you give us the inside word on the SSW software.

Roseanne Douville

Dear Roseanne:

I was going to make a funny comment about *four questions* (*The only time I answer four questions is at Passover*). But I decided that people want to know what I have to say and not how funny I am. So I'm keeping my mouth shut. [I heard that Richard].

Engineer's Reversals

As you know there are 3 types of reversals. We know the most about "common reversals", primarily because they are common. Reversal Ear Effect and Engineer's reversals are rather uncommon. Thus the literature on them is meager. However, that hasn't stopped us from speculating and making what Ackie believes are intelligent assumptions.

An engineer's reversal is an item that is out of order (with one or no errors) when it is follows the pattern 1, 3, 2, 4. If we use the overused 1-UP 2-STAIRS 3-DOWN and 4-TOWN as our model, the person would say, *UP DOWN STAIRS TOWN*. Strange, isn't it?

For these reversals the person switches the position of the two competing words, taking the third word before the second. Jack noted that engineers and other very precise people tended to be the ones to make these reversals, but after Dave Johnson called about some research that he was doing the explanation started to take form.

Dave had tested normal control subjects on the SSW test and called one day with a question. *How would you interpret that three of our oldest and perhaps our best subjects had 17-19 reversals?* The younger ones had few if any reversals. When it was revealed that these reversals were not of the usual variety, but were engineer's reversals, the plot thickened.

Jack asked Dave if he had done anything different in his study. No, he said, *except what we had talked about in the* ***instructions***. Of course Jack didn't remember what that was all about. Dave had asked if there would be any problem in adding to the instructions, *but say the first word first, the second word second and so on.*

Well it looks like the oldest and brightest of the children did exactly what they were asked to do. They said the first word first and the second word second. See the figure below of Rudmin and Katz (1982) showing the relationship between the competing items. You will see 19 items in which the third word is initiated before the second (e.g., items #3 and 7). Therefore if

FIGURE 1.
Competing monosyllables for the 40 SSW items, EC recording. The thick lines represent sonorancy and the thin lines represent nonsonorancy. The initial onset begins on the left side. The competing monosyllable of the leading spondee is always on top. The time scale is presented for 200 msec.

someone took the instructions literally they would take the test called Which Word Came First (Second, Third and Fourth). This would yield a number of engineer's reversals just because of the overlapping and they strictly followed the tester's instructions.

In addition to engineers, Amy Wetherby found these reversals were rather characteristic of her autistic subjects. They, like engineers, have a reputation for precision (e.g., in their echolallia) and are more temporally than linguistically oriented. They tune into the order of things more so than following the linguistic ties that the rest of us find so compelling. We surely would not break up spondees and perhaps couldn't do it because of the attraction of the two parts of the compound words.

We view engineer's reversals as non pathological peculiarities. They might suggest a level of acoustic-temporal precision at the expense of linguistic influences.

STATUS OF TYPE A

The SSW is an exotic (intriguingly unusual) test, even Ackie thinks so. But there is no feature of it more exotic than the Type A. Space does not permit a lengthy discussion of this sign (Roseanne, you probably remember some of it from the SSW Workshop).

There are two criteria to be met for a traditional Type A. There must be a large number of errors in column F (or B) relative to the highest of the remaining 7 columns, so that F is at least twice as great as the highest of the 7 and there must be a certain spread, depending on the person's age.

The Type A has served us well for many years, aiding in the identification of patients with corpus callosum tumors and in more recent years indicating often severely learning disabled individuals. We associate it with an Integration problem (generally difficulty bringing together left and right hemisphere types of information (e.g., auditory-linguistic and visual-spatial; matching linguistic output with appropriate affect). Recall, individuals with type-1 Integration problems are often diagnosed as dyslexic.

We are now using the NOE approach. Just like Harriet and most people who have tried the NOE find it faster and easier than the C-SSW approach and it has some additional benefits. It has taken Jack a long time to figure out how to apply a statistical appraisal to Ear and Order Effects, but Type A has been a much greater challenge. He and his colleagues have been trying to do it in one step based on a statistical approach and, so far, it is working out fine. Generally, the NOE is a bit more sensitive than the original Type-A calculation, but we must be cautious as there might be some additional false positives if a person has a lot of errors. Thus far, we have not had any obvious problems with it, but we are taking it slowly.

The new calculation is to compare F and B, as before, and to use the larger of them as "F". Then choose the largest of the remaining seven columns and consider this column "X". Then subtract X from F and compare any positive scores to the norms below. If the difference is greater than the table value it is significant (a Type-A pattern). If the value is negative, equal to, or less than the table value, it's not a Type A.

Age	+2SD	Age	+2SD
5	4	10	3
6	7	11	3
7	5	12-59	3
8	3	60-69	3
9	3		

Type-A Norms (+2 SD) - October 1996
for difference score (F minus X).

The February 1996 issue of **SSW REPORTS** was devoted to the NOE Type A analysis (Katz, Smith and Kurpita). It shows that NOE Type A analysis appears to have slightly better specificity than the original method and better sensitivity as well. If we were dealing with the same analysis procedure and just change the cutoff points improving both would not be possible. But the methods used are different. One is statistical using the 2SD point for columns F minus X and the other method uses the 2-criteria approach (2 times X as well as a certain absolute difference). So, NOE appears to have the best of both worlds.

SSW AND TALLAL ET AL.

The media has played up CAP with the introduction of a computer game that incorporates the concepts developed by Paula Tallal and her colleagues. Roseanne Douville asks what the relationship of the SSW is to their work.

In 1983, Katz wrote about the relationship of Phonemic Synthesis to Tallal's work. Now that we know how PS relates to the SSW categories we can make a reasonable estimation as to how the SSW and Tallal's work coincide/differ.

Tallal has detected auditory processing deficits in children who are considered severely language impaired. The major sign (to my way of thinking) is poor phonemic Decoding. The program that she and her colleagues devised appears to aim at improving Decoding skills. The duration of the critical parts of sounds are elongated and the intensity of this portion increased. Thus, it makes the phonemic image more salient. I imagine that through the repetition of the computer game strong images of the sounds are encoded in the brain and thus improve perception. It is to some extent similar to Phonemic Synthesis training , but it incorporates this sharpened image produced by the elongation and greater intensity for the crutial elements. Tallal's procedure according to her co-investigator, Steve Miller, is now undergoing field trials to see if their laboratory results can be replicated.

Ackie assumes that those who will benefit most from the computer program developed by Tallal et al. are those who show poor Decoding (RC, LNC, Order Effect L/H, delays, silent rehearsals etc.). In addition, poor scores on Phonemic Synthesis and the Decoding qualifiers would also be good indicators.

We will surely know more in the near future. Steve Miller will have a chapter on this technique in the book by Masters, Stecker and Katz that is expected to come out in 1997 (Allyn & Bacon Co.).

SSW SOFTWARE

*SSW C*I*R*

In 1988 Katz, Yeung and Medwetsky came out with a computer program to Calculate, Interpret and Recommend from SSW test results. It required that 11 numbers be entered (age, 8 cardinal numbers, reversals and the WDSs for each ear). The program did the rest.

The ***SSW C*I*R*** program calculates C-SSW scores and presents the appropriate norm for the person's age. It shows the four Condition scores and which are significant. The program then lists the significant response biases and Conditions, offering various types of information for any and all of these results.

The program tells what category is suspected for each of the findings and additional characteristics of the individuals who have such signs. The characteristics may include speech-language problems, aca-

demic, and behavioral features seen in these children or adults. Files can be accessed that provide statistics of what percent of people of certain age groups fail this feature if they were seen for CAP evaluations because of suspected problems versus evaluation of control subjects within the same age range.

The program offers recommendations for management and therapy based on the specific problems and categories encountered.

SSW-PLUS

Two years ago Katz, Smith and Kurpita began working with Dr. Nicholas Powers, a programmer, to develop an even more advanced program. The new program is called ***SSW+***. It incorporates the previous features of the ***C*I*R*** program and adds Phonemic Synthesis and speech-in-noise. The "Plus" program gives many options. For example, for those who use qualifiers it permits storage and assessment of them for both the SSW and PS tests. It permits speech-in-noise analyses with your own local norms entered or with national norms. National norms (e.g., for the SCAN) or other tests can be entered and the advent of speech-in-noise tests on CD will enable us to develop national norms readily in the near future, when collecting them nationally or locally. The audiologist can choose the NOE or original analysis or ask for both. There will be a print program in the **SSW PLUS** program instead of print screen in **C*I*R**.

The new **SSW PLUS** program is expected to be completed in the next several months. Those who purchase the **C*I*R** (a DOS) program and wish to upgrade to **PLUS**, can do so at a considerable discount within a period of time after **PLUS** is released. **PLUS** is a Windows (3.1 or higher) program.

CENTRAL TEST BATTERY: THE CD

Precision Acoustics will be offering a CD: ***Central Test Battery,*** beginning about March 1997. The CD will contain seven tests that are useful in a CAP or site-of-lesion central test battery.

Calibrate each channel initially and no further calibration is need. Set levels in each ear at 40 or 50dB SL and only small adjustments are needed later and no switching channels. Just select the lists you want. The tests are:

- Ira Hirsh's CID W-22s (enhanced) L and R channels (2 lists) for WDS in quiet.
- Ira Hirsh's CID W-22s (enhanced) L and R channels (2 lists) with speech-spectrum noise in the opposite ear.
- Staggered Spondaic Word (SSW) test, list EC
- Phonemic Synthesis (PS) test.
- Phonemic Synthesis Picture (PS-P) test.
- Competing Environmental Sounds (CES) test.
- Phoneme Recognition Test (PRT)

Most of you are familiar with these tests except for PS-P and PRT. PS-P is a phonemic synthesis test for preschool, kindergarten and first grade children. The regular PS test is geared to children 1st to 4th grades. We shall discuss PS-P in an upcoming **SSW REPORTS**.

The PRT is a test that was developed to determine the phonemic perceptions of those who have cochlear implants. We have found it an excellent way to monitor improvement in phonemic therapy. It may have other applications with the hearing impaired and also with those who have CAPD.

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