

SSW Reports

CAPD Testing When English is the Second Language

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CAPD Testing with Foreign Born Twins

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When English Is A Second Language - Susan Brandner, Jack Katz & Donna Goione-Merchant

“But he’s English dominant!” “She doesn’t speak Spanish anymore.” “The speech-language specialist says s/he needs an auditory processing evaluation.” Over the years I have found that children who are raised in a bilingual environment perform poorly on tests of auditory processing. I have always reported these findings with a ‘warning label’—advising the referral source that the results are probably impacted by the bilingual environment. These children display difficulty on our tests and undoubtedly would benefit from therapy. Do they have an auditory processing problem? How might that differ from someone who has a different root language that s/he no longer is exposed to or someone who displays the same difficulties but has only been exposed to English?

Our school system, like most, has a need for speech-language professionals. Therapy is given once or twice a week for about 20 minutes, usually in a group no larger than 5. Will this type of therapy be helpful or would it be better to train the speech staff to work with entire classes? Our referral sources are often looking for classroom assistive listening technology, in hopes that the students will be ‘cured’.

When discussing this situation with colleagues the question was raised as to

whether or not it makes a difference if a child remains with their birth family in the bilingual environment as compared with children who have been adopted from foreign countries and no longer are exposed to their root language. The following is a review of 3 cases. One child was adopted from Russia and is no longer exposed to the Russian language, one child learned Spanish as a child and while he understands the language he does not speak it. The third child is English dominant but resides with his family in a home that primarily speaks Portuguese.

The first child, ‘Serge’ a 10-year-7-month old boy was adopted from Russia where he spoke only Russian. He was adopted by a couple in the US and learned English after his arrival at age 6. The Child Study Team referred him to Donna Goione-Merchant’s practice because despite modifications in the classroom, he was still exhibiting academic problems.

‘Serge’s’ results on the SSW were normal for using NOE norms. However he had 17 reversals and repeated ‘Are you ready?’ for almost every item. It is important to remember that tests of auditory processing are not as sensitive for children age 10 and over as they are with younger children. Therefore reviewing the qualifying information will provide the subtle indications of his struggle to perform as well as he did.

SSW

	<u>RNC</u>	<u>RC</u>	<u>LC</u>	<u>LNC</u>	<u>Total</u>
Serge	0	2	2	1	5
NOE	1	3	5	1	10

Results for the **Phonemic Synthesis Test** were also normal with a quantitative score of 23 and a qualitative score of 21. The expected scores are 21 quantitative and 20 qualitative.

Donna had also administered the Frequency and Durational pattern test and reports that ‘Serge’ had difficulty on the expressive/verbal components. He also showed inconsistent responses on the Random Gap Detection Test.

It is difficult to make a diagnosis based on *soft signs* and inconsistencies. Do we need a diagnosis to suggest modifications in the classroom as well as some therapeutic intervention in those areas where ‘Serge’ showed signs of a struggle? The school system could/would probably not provide therapy based on these findings -- there are limitations to what a ‘Free and Appropriate Public Education’ must provide by law. However, it would be worth seeing if this child could receive some short-term private therapy to address these weaknesses so that the classroom performance might improve.

The case that was provided by Jack Katz tells us about a child ‘Jason’ who was 13-years-old at the time of testing. He learned Spanish, as a young child but is not surrounded by it now. He does understand Spanish but generally does not speak it. Again, tests of auditory processing are not as sensitive in children over the age of 10; the fact that his scores are notably poorer than normal suggests his struggle is greater than the actual numbers indicate. His scores are below.

SSW

	<u>RNC</u>	<u>RC</u>	<u>LC</u>	<u>LNC</u>	<u>Total</u>
Jason	1	4	6	1	12
NOE		2	6		6

The abnormal results in both competing conditions, suggests both **DEC** and **TFM** problems.

Phonemic Synthesis Test

	<u>Quantitative Score</u>	<u>Qualitative Score</u>
Jason	19	12
NOE	23	22

Both Quantitative and Qualitative scores are significantly poorer than expected. Jason appears to be working very hard, using compensations to get items correct. This is the second test that demonstrates that he is experiencing DEC problems. The qualifiers that are reported, delayed, non-fused and perseverative responses are all additional indications of **DEC** problems.

On the **Speech-in-Noise** test, Jason’s Inter-aural Difference is **8** and the norm is 7. This suggests that Jason is having difficulty using his binaural hearing efficiently to suppress background sound. If Jason could have auditory training that focuses on phonemic decoding, I would expect this score to improve as well. Fortunately for this child Jack did the evaluation and has developed the programs that can provide remediation Decoding and other problems.

The child that I evaluated lives in a Portuguese speaking home, in the primarily Portuguese speaking ‘Ironbound’ Section of Newark NJ. There are some wonderful restaurants there! Until this year, Paulo was receiving bilingual education. The Child Study Team has not accepted ‘Paulo’ because his performance is not severe enough to make him eligible for special education. He does have a 504 plan and the social worker requested this evaluation to see if his test results might be poorer than

‘just’ bilingualism might explain. Perhaps something could be found that would make him eligible for additional intervention.

Paulo has a history of otitis that includes a hospitalization last year, when he presented with a bleeding tympanic membrane. He has allergies and takes medication. Additionally, he has been diagnosed with ADHD and takes medication for that as well. I accepted this case reluctantly – what would I be measuring? I decided that I was not looking for a diagnosis; I was looking to see if there were recommendations that could be made that might improve Paulo’s academic performance.

SSW

	RNC	RC	LC	LNC	Total
Paulo	3	15	30	5	53
NOE	2	5	7	3	16

Type-A !

Speech-in-Noise

	<u>Quiet</u>	<u>Noise</u>	<u>Difference</u>	<u>Signif.</u>
Right	92%	52%	40%	Yes
Left	88%	60%	28%	Yes

Paulo’s **Inter-Aural** difference is also significant for his age.

Phonemic Synthesis

Paulo was only able to get **3** items correct on this test!! Although this is a skill that can be impacted by bilingualism, the norm for his age is 17 items correct.

My school system has asked that tests in addition to (or instead of) the Buffalo Battery be included in a workup. They believe that our battery is too sensitive. Therefore, I gave Paulo the Random Gap Detection Test because it is a non-linguistic test. He showed normal gap detection at 1000 Hz, 2000 Hz and reduced gap detection at 4000 He showed inconsistencies

on the practice items and at 500 Hz, which might be a reflection of the ADHD.

Whenever I find a child with a Type-A pattern I recommend that they have an occupational therapy evaluation to investigate sensory integration skills.

Paulo’s performance was so poor that I can comfortably state that while bilingualism impacts on his language skills that other factors contribute to his academic struggle.

Do these three cases answer anything about bilingualism and auditory processing? Is Paulo’s performance poorer than the others because he remains in a bilingual environment? Is Serge doing better because he no longer hears the Russian language? Is Jason performance, in the middle of the others because he does not speak the language of his youth? I don’t know. If children like our three get some auditory training, we may be able to help the ‘unclassifiable’ child gain the skills s/he needs to achieve academic success.

**Auditory Processing and Attention in a Set of Bulgarian Born Twins
Amy Jackson**

The age when they were adopted, their country of birth, their root language is Bulgarian, they have a significant birth history and a significant medical history, what was I to expect when I was asked to assess the auditory processing skills of a set of 8-year-old twins? The children had also been diagnosed with ADHD! Nolan a male and his sister Samantha were adopted at age two from an orphanage in Bulgaria. Although the pre-natal history was vague, what is known is that the twins were born six-to-eight weeks premature, under three

pounds; Samantha was born vaginally and Nolan via c-section the next day. Both had salmonella; Samantha was hospitalized for the first twelve months of her life and Nolan for the first nine months, so they were not sent to an orphanage immediately following birth. No further history was available. I had been introduced to these twins when they were four years old to rule out hearing loss; a previous hearing test at another facility had been inconclusive. At the first evaluation in October 2005, Nolan had minimal low frequency conductive hearing loss at 250 & 500Hz. rising to normal across the frequency range with normal middle ear air pressure and compliance bilaterally. Samantha's audiological results showed mild conductive hearing loss bilaterally supported by flat tympanograms on both sides. Nolan's speech was intelligible and his Mom described him as the healthier of the two. Samantha, on the other hand, had been receiving speech and language therapy for articulation errors and language processing, but her Mom felt she should be making better progress. Most likely her progress was stymied by the chronic otitis media.

Following my evaluation she was referred to an ENT for medical management and instructed to return for follow-up when the medical management was complete. I did not hear from them again until January 2008, when Samantha returned for another audiologic evaluation. It was then that I found out PE tubes had not been inserted in 2005 because the two times she had visited the ENT her tympanograms were normal! Samantha was now almost seven years old; she still had persistent articulation errors, difficulty following directions, and recurrent middle ear pathology, supported by my audiologic evaluation and flat tympanograms that day. She had continued to receive speech therapy during these three years. I referred her mother to another ENT

for second opinion medical management. That physician inserted PE tubes. Samantha returned in March 2008 with both tubes in place and patent and NORMAL hearing! Samantha is in the process of a psycho-educational evaluation; I am on the team with a speech language pathologist and psychologist. This evaluation was requested by her parents because of Samantha's continued difficulty with reading, attention, comprehension, etc. In a personal conversation with the psychologist, a diagnosis of an ADHD-Combined Type is evident for Samantha. Nolan had been diagnosed with ADHD by another physician and is being treated with medication; no speech therapy has been warranted for him, according to his Mother. Both children were held back one year from kindergarten and are now in the first grade at a private school.

Results for both children:

The SSW Test:

	RNC	RC	LC	LNC	Tot	Rev
Nolan	6	16	22	6	50	4
Norm	2	5	7	3	17	4

	RNC	RC	LC	LNC	Tot	Rev
Saman.	4	23	25	5	57	3
Norm	2	5	7	3	17	4

Both children showed significant **DEC** and **TFM** signs. An Ear Effect (L/H) was also present for both, supporting the **TFM**, and a significant number of delays were noted, supporting the decoding deficit. Surprisingly, given the fact that both children have been diagnosed with ADHD, both were within the average range for reversals. When considering that Nolan is on medication and Samantha is not, this is a somewhat unexpected finding.

The Phonemic Synthesis Test:

	Quantitative	Qualitative
Nolan	23	9
Samantha	17	8
Norm	17	15

Nolan was within normal range; however, he had a significant amount of qualitative responses, most of which were quick responses and quiet rehearsals. Samantha was borderline normal with the number of errors, but she also had a significant amount of quick responses and reversals. Given the similar scores on the SSW, could the difference between the two of them be attributed to the significant recurrent otitis media and delay in PE tubes?

The Speech-in-Noise Test:

Nolan	Quiet	Noise	Diff.	Norm
Right	100%	68%	32%	22%
Left	80%	72%	8%	22%

Inter-aural Difference **24**
 Normal Limit **9**
 Significant **Yes**

Saman.	Quiet	Noise	Diff.	Norm
Right	88%	80%	8%	22%
Left	100%	96%	4%	22%

Inter-aural Difference **4**
 Normal Limit **9**
 Significant **No**

The Low Frequency Filtered Words Test

was administered in addition to the Buffalo Battery to assess auditory closure. Children who have APD are likely to have difficulty ‘closing’ a word when all the sounds are not heard clearly. This test was administered to

determine the extent of the twin’s auditory closure abilities.

	Right Side	Left Side
Nolan’s Score	76%	68%
Normative Data	56%	52%

Nolan’s score was within normal limits.

Samantha’s Score	36%	60%
Normative Data	56%	52%

Samantha’s score was below normal on the right side.

Before analyzing the results, let’s consider the similarities of these two children: both born premature, low birth weight, salmonella, hospitalized for the first year of life (which is a blessing because they were probably held and coddled and spoken to more than if placed in an orphanage following birth), ear infections, adopted to the same family at two years old, attended the same pre-school, diagnosed with ADHD and received the same academic assistance from home.

Now, the differences between them: Samantha was hospitalized three months longer, had chronic recurrent otitis media, has received three years of speech and language therapy, and has received one set of PE tubes.

But when evaluating these results, it is obvious that the similarities outweigh the differences! It is apparent that both Nolan and Samantha have significant **Decoding** and **TFM** deficits. Whereas Nolan seems to do better with phonemic synthesis, the twins’ qualitative scores are fairly equal, suggesting that both are using strategies to overcome their **Decoding** and **TFM** deficits. The difference noted is that Samantha is performing better in Speech-in-Noise than

Nolan, which is an unusual finding. Considering Samantha’s otologic history, one would expect her to have more difficulty. But, either way, when considering the *Phonemic Synthesis* qualitative score and the *SSW* scores, both children need auditory processing therapy!

So, given that the root language was Bulgarian for both children and both have obvious auditory processing deficits, it would be easy to suggest that children whose root language is not English are more susceptible to auditory processing deficits. However, one cannot overlook the compromised delivery, low birth weight, and early history of otitis media, all of which lend themselves to a higher risk for auditory processing disorders. This experience, though, is definitely a start at monitoring other foreign adopted children to determine if this is a trend that we must make parents and schools aware of so identification and management can be implemented at a young age to avoid academic problems later.

Mini SSW Workshop Online
Jack Katz

It seems like years since I gave an SSW workshop, but I will give parts of a workshop in July and August for *Audiology Online* on three successive Friday afternoons for 2-hours each. The first one will be on scoring items. For example, do you know the foolproof method for scoring an item so that you never make a mistake?

1.	up	stairs	down	town	R	
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Pop Quiz: The person says, “**up, town, stairs gown**” please score the item above now (hmmm, no cheating please).

The foolproof method is to consider each word, from left to right and ask “did he/she say *up* and if yes leave it alone. When you get to *door*; the answer is no he/she did not say that word so we draw a horizontal line through the word *door* and continue. When you checked all 4 words there is only one error word and you have only one word of the response that is not said. The error word was *gown* so we put that above the word *door*. That takes care of the errors (just one in LC condition). It was clearly out of sequence so we check for a reversal. We enter numbers below the words to show the sequence. If there was one or fewer errors and the item was out of sequence then it is a reversal; so we circle the R. Of course a ‘1’ is placed in the Wrong Box since there was one error.

1.	up 1	stairs 3	down gown 4	town 2	(R)	1
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Nicely done! The second AO presentation is scoring the entire SSW test. Did you know that if there is a significant Type-A pattern on the test that we do not consider Ear or Order Effects as significant? Of course, they might be significant but we don’t take the chance because there is a good likelihood that it was due to the large number of errors in column F (or column B).

Did you know that too? You have done well. Okay, the third AO session is putting the pieces together. Hopefully, you take advantage of the excellent Qualifiers that we have on the SSW test and use all 3 of the Buffalo Battery tests. There are 37 indicators of APD that can be considered in deciding if there is an APD and if so what categories.

If you know that much you might not need the workshop, but you might mention it to one of your colleagues who could benefit.