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THE AVAILABLE WORD

Jack Katz

You may recall from an SSW Workshop or perhaps from your readings that the first and last monosyllables of SSW items form a third spondee. The purpose was to encourage an error and to permit an individual to "fill in" with an available word.

For example, the item "door knob cow bell" could be erred on as "door bell cow bell" or "door knob door bell". This would occur if the individual had a significant lack of knowledge about the RC or LC words, respectively. Of course "door bell" would appear acceptable if both competing words were unintelligible.

Is this third spondee (or available word potential) a useful or confounding influence? In the vast majority of cases it seems to be quite helpful. Rudmin (1982) has shown that it is a significant factor for binaural cochlear, learning disabled, and mentally retarded cases. More familiar combinations are more attractive to the listener. It has a particular value, as I see it, in contenting the listener with a reasonable answer. Therefore, he does not seek to figure out the true answer by guess or from the acoustic cues and clues. It is reassuring that the person is able to give a two-spondee response so that he does not feel as though he is doing badly on the test.

The presence of an available word to fill in could also be confusing in atypical cases: on the SSW test, a 10 year old child used the "available word" in 2 of the 4 items in which he made substitutions for the LC word (eg., #20, ice cream, sweet cream). But, for #30, he said "door bell cow." My guess is that he probably had a rising inflection on "cow" and showed confusion. He was going to say "door bell cow bell" but realized there was only one "bell" and he had already said it. So he stopped there. If he had said "door bell cow bell" it would simply be another substitution in column F, using the available word. But by forgetting or deciding not to repeat "bell" we must score the item differently. It should look like A and not B:

A door ~~knob~~ cow bell (1 R)
1 3 2

B door bell ~~knob~~ cow bell (no R)

Thus, by neglecting to add the last word Michael picked up a reversal. A bad rap. My guess is that it was not actually a reversal but since we need to score in a consistent manner it should be indicated as shown in the first example. Since we also have free will, we also indicate under comments that the reversal was an artifact and should be ignored. That was the only reversal for this 10 year old child so it made no effect on interpretation anyway. He would need 5 reversals for them to be considered significant at his age.

Attractive and available alternatives are typically helpful on the SSW, but occasionally (rarely) you may see one like this that alters the scoring slightly. No big problem but it is interesting. Any comments?

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THE LNC CONDITION

Jack Katz

Most clinicians and researchers have concentrated their attention on the competing Conditions of the SSW test. This seems reasonable because the competing Conditions are almost always the more depressed, whether the individual is brain damaged, LD or perfectly normal. The reason for the challenge of the competing words is primarily because they represent the dichotic portion of the SSW item. Dichotic speech is sensitive to contralateral auditory reception damage and the LC is also degraded by involvememt of the corpus callosum (in those who are left hemisphere dominant for language).

In 1976, Weiland carried out a study with LD children. Results on the SSW test were correlated with performance on the Illinois Test of Psycholinguistic Ability. The RNC and LNC Conditions correlated significantly with the Auditory Closure Subtest. However there was no significant relationship between the Token Test and the competing Conditions.

Air (1979) studied the SSW and the Boston test of aphasia in 10 aphasic patients and 10 normal controls. Correlations were computed between each of the SSW Conditions and the 52 subtests of the Boston. The significance level of .02 was chosen to set a stringent criterion. The results are shown in table 1.

Table 1 shows that the right ear Conditions (RNC and RC) correlated significantly with the repetition of words and no other subtests of the Boston. The LC correlated with the ability to repeat words as well as three other subtests. The LNC Condition did not correlate significantly with repetition of words but did with 13 other subtests. It stands out as the indicator with by far the greatest number of significant correlations with the Boston test. Each of the significant correlations for the LC, except for repetition of words, were also significant for LNC. In addition the strength of the correlations are generally higher for LNC than the other Conditions.

SSW COND	SUBTEST OF BOSTON TEST OF APHASIA	r
RNC	repetition of words	.671
RC	repetition of words	.682
LC	spelling to dictation	.732
	repetition of words	.671
	narrative writing	.660
	sentence to dictation	.653
LNC	neologistic paraphasias	.787
	spelling to dictation	.770
	word-to-picture matching	.752
	confrontation naming	.743
	word recognition	.720
	body part naming	.712
	sentence to dictation	.709
	response naming	.703
	paraphasias in running speech	.686
	verbal paraphasias	.685
	narrative writing	.685
	following commands	.680
	primer dictation	.667

TABLE 1. SSW Conditions and the subtests on the Boston test to which they are significantly correlated (p=.02 or less). The Pearson correlations are also shown. Because of the scoring system on the Boston, some of the correlations were noted as positive and others negative. The signs were disregarded because all r's show the expected relationship between the two tests.

Recently, we looked at some data for LD children from our clinic. There were 11 girls and 14 boys in this group of 25 consecutive cases with complete data. The children ranged in age from 6 - 13 years (mean = 8.9 years). Correlations were computed for age, the four SSW Conditions and a test of Phonemic Synthesis (PS).

A brief explanation of PS is in order. Phonemic Synthesis is a form of sound blending (Katz, 1983). In LD children PS performance correlates with reading, spelling, language, verbal IQ

and articulation ability. Recently, Kahler (1983) found that when children were tested on the PS test on entering the first grade, their reading ability at the end of the first grade could be predicted. Thus, PS is an auditory task that is closely associated with a broad range of language abilities.

The correlation matrix between SSW and PS is as follows:

	PS	RNC	RC	LC	LNC
AGE	NS	NS	-.382*	-.513**	NS
PS		NS	NS	-.491*	-.581**
RNC			.701**	.516**	.414*
RC				.740**	NS
LC					.481*

* = significant at .05 level
** = significant at .01 level
NS = non significant

Table 2. Correlation matrix for 25 LD children, comparing age, Phonemic Synthesis and the SSW Conditions. The negative correlations were obtained because PS is scored in % correct and SSW in % error.

Table 2 suggests that: 1) age is not significantly correlated with PS, RNC, and LC results. Therefore, correlations among these three parameters should not be influenced by age factors, per se ; 2) LNC has the highest correlation with Phonemic Synthesis and the smallest correlation with the rest of the SSW. The correlation between LNC and PS is not likely to be due to age effects; 3) RNC performance is associated with RC and LC as well as LNC to a lesser extent; 4)RC and LC correlate highly with one another--however the correlation with age might contribute importantly to this relationship.

Discussion: The significant correlation between LNC and PS shows that the poorer the PS performance, the poorer LNC is likely to be. It is impressive that it is the LNC Condition that is related to PS, which is a decoding and language related procedure. Therefore it is not surprising that PS correlates significantly with the LC C-SSW score as well, but not the RE Conditions. Poor LE performance on dichotic tests is typical in LD and language impaired children while PS is closely correlated with the auditory association regions of the brain in similar groups of children (Katz and Harmon, 1981). The reason for this and the other indications that LNC is sensitive to language impairments, remains unexplained.

There is no doubt more than one suitable explanation for the striking independence of the LNC Condition from the rest of the SSW. One consideration for this is the physical connections to Broca's area on the left makes LNC more secure. That is, each of the other Conditions seem to have a preferred pathway while the two LNC paths seem about equal. The RC for example sends information to the left hemisphere via the strong crossed pathway (giving it two strong features--the strong pathway to the language dominant hemisphere). The other RC pathway is inhibited or extinguished by the LC. The LNC is quite different. It has two pretty good pathways. It could go to the language dominant hemisphere (assuming that it is the left) via the weaker ipsilateral route (not bad) or via the crossed stronger route to the right hemisphere. At that point it must make its way to Broca's (also not too bad). If the RNC has a block in its dominant pathway to the left hemisphere, it must depend on the weaker pathway going along the ipsilateral route to the right hemisphere and then cross over to the left hemisphere and on to Broca's. Like LNC, the LC condition is delivered on the crossed pathway to the right hemisphere and must get to Broca's on the left. There is no ipsilateral route. So it appears that LNC has the best chance of getting through if there is a problem since it could go to the right hemisphere, the left hemisphere, or have a combination of right and left information sent to Broca's. The LNC should be far less influenced by corpus callosum or left

ditory reception problems than the LC. cause LNC is less influenced by the jor factors on dichotic tests it might free to reflect other factors such as ditory processing and language difculties.

While it is smart to keep your eye the LNC, it is well to remember that C accounts for only one third of the riation associated with PS or vicersa. Thus, each of them has a great al more to contribute to our underanding of the child with an auditory ocessing problem.

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DEAR ACKIE

ar Ackie:
I thought this SSW REPORTS was professional publication. Obously not. Does SSW stand for nning Surfing Woman-- otherwise at is this "attractive and ailable" stuff all about?
(signed) CURIOUS & IMPATIENT
ee important response page 11.]

ITEM ANALYSIS FOR REHABILITATION GUIDELINES

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In 1976, Freeman & Beasley focused attention on the SSW EC tape's dichotic alignment. They reported onset alignment variability and found that that variability did not influence the SSW performance of normal college students. Nevertheless, their study resulted in inferences that the usefulness of the SSW was questionable because of variability in assorted characteristics of the individual SSW items (Beasley & Rintelmann, 1979; Matthies & Garstecki, 1980). For the past several years, I have been trying to respond to those studies and inferences, with some successes (Rudmin, 1981; Rudmin & Katz, 1982) and some frustrations (Rudmin, 1982). In the process, I have developed a data base, describing each SSW EC spondaic word on 13 alignment, 14 phonetic and 10 linguistic characteristics. My most recent analysis of the SSW performance of 134 subjects in 6 clinical groups shows that the criticisms of the SSW on the grounds of item variability are not well founded (Rudmin, in press).

However, other more legitimate concerns remain about the uses of the SSW. Keith has argued that the validity of the site-of-lesion interpretations of ear and order effects and of reversals requires replication (1983a) and that CANS tests designed for site-of-lesion purposes, such as the SSW, may be inappropriate for rehabilitation purposes (1983b). As a remedy for this second concern, it may be possible to expand the analysis of SSW responses to allow both the

traditional SSW site-of-lesion interpretation and a descriptive, functional interpretation based on the characteristics of the auditory task that are difficult for the subject. The SSW is an ideal test for a descriptive item-analysis approach because of its complex presentation design and because of the inter-item variability that was the focus of earlier criticisms.

Using a data base such as I have developed on the SSW EC tape, it would be possible to identify the common characteristics of the spondaic words that a person misses. For example, a person may systematically err on final plosives, or may not be able to take advantage of the semantic linkage between the two halves of each spondee, or may be sensitive to the early interruption of the second spondee on the processing of the first. An item analysis like this would require statistical processing by a computer. But with mini-computers becoming common clinical tools for BAEP testing, for hearing aid selection and for office records and word-processing, the hardware should be increasingly available.

I would like to propose a challenge, as an experimental demonstration of the concept I am proposing. Would some reader who has an extensive audiological, psycho-linguistic, and educational work-up on a child (or adult for that matter), share with me just the SSW EC performance data, i.e. pages 2 and 3 of the SSW score sheet? Based on that alone, and blind to other information on the case, I'll try to prepare an analysis of the person's functional auditory disabilities. Then perhaps reports based on the SSW item analysis and on the full clinical dossier could both be published simultaneously in the SSW REPORTS for comparison and discussion. Such an experimental demonstration might indicate the degree to which an item analysis replicates, complements, or confounds the traditional analysis.

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ACKIE ANSWERS CUR & IMP

English is quite flexible. "Attractive & available" refer to linguistic properties not beauty and social attitude. Recall that Saul (1982) found the SSW and the Staggered Digit Test both similar and different. A major difference between them is the SSW has certain linguistic connections. Among them is the attractiveness and availability of the NC word.

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