Part II: Use of the Clinical Evaluation of
Language Fundamentals –4 with Arab-American
Children
I. Transfer effects observed in the performances of typically developing Arabic predominant Arabic-English bilinguals: Concepts and Following Directions Subtest

Directionality effect. The concepts and following directions subtest assumes correct responses based on the use of left-to-right orientation. Typically developing Arabic-English bilingual children between the ages 6-9 tended to use right-to-left orientation in responding to items including sequence items (such as first, last, second, third, and fourth). This is consistent with the right-to-left orientation of Arabic script.

II. Observed responses of typically developing Arabic-English speaking children between the ages of 6-9: Word Structure subtest

Plurals

• 90% of participating 7, 8, and 9 year-olds correctly used the English regular plural as tested in items 1 and 2. Participating 6 year-olds responded with 66% accuracy on the regular plural items.
  o The most common error, especially amongst the 6 year-olds, was the elimination of plural endings (e.g. horse/horses). This might be related to Arabic-English contrastive features (i.e. a transfer effect).

• All groups with the exception of the 9 year-olds, had difficulty with irregular plural marking as tested in items 3 and 4 (6 years: 41% correct, 7 years: 62.5% correct, 8 years: 70% correct).
  o The most common errors were the elimination of plural endings (e.g.
mouse/mice) and the affixation of the regular plural marker (e.g. mouses/mice; childrens/children). Deletions of plural marking were most common in the 6 year-old group and regular marker affixation was observed in the 6 and 7 year-old groups. This observation might be related to Arabic-English contrastive features (i.e. a transfer effect).

Possessives

- Participating 7, 8 and 9 year olds performed at over 90% accuracy on items requiring the use of English possessive nouns (7 and 8). The 6 year-old group had some difficulty with this section with an average score of 66% accuracy.
  - The most commonly observed error was the elimination of the possessive marker (e.g. Paula boots/Paula’s boots) which was primarily seen in the 6 year old group. The use of the periphrastic ‘N1 for/of N2’ for the possessive marker (e.g. boots for the Paula or boots for Paula/ Paula’s boots; for the king/the king’s crown) was largely observed in the responses of the year-old group. This type of English error is consistent with correct way of denoting possessors in the Arabic language.

Tense

In general, children’s usages of tense markers were better than in items addressing inflectional and derivational markers at the early stages of English learning (i.e. participating children age 6 and 7 years). Most of the children’s inaccuracies related to tense were in the area of future tense instead of present progressive tense (e.g. are eating, eating/will eat). Such inaccuracies were more common in the 6 year-old group.

- **Present tense.** On items examining the production of present tense, specifically third
person singular (items 5 and 6), most children in the 7, 8, and 9 year-old age groups scored a 90% or higher (6 years: 67% correct, 7 years: 92% correct, 8 years: 92% correct, 9 years 100% correct).

- The most common observed errors were the deletion of the present tense marker (e.g. fly/flies), or substituting the present tense marker with a present progressive marker (e.g. flying/flies). These errors were largely observed in the responses of participating 6 and 7 year-olds.

• **Present progressive tense.** Children correctly used the present progressive marker (i.e. Auxiliary + ing) on items 11 through 14 in all age groups (6 years: 85% correct, 7 years: 87.5% correct, 8 years: 98% correct, 9 years 100% correct).

  - Most of the children’s inaccurate responses in this item involved the deletion of the auxiliary and/or subject (e.g. –they are/ they are jumping; this boy and girl to playing with a rope/ the boys are jump roping) and the use of prepositional phrases (e.g. they are in the swings/ they are swinging). These errors were mostly observed in 6 and 7 year-old groups.

• **Regular past tense.** The 7, 8 and 9 year-old groups demonstrated mastery on the items evaluating regular past tense (7 years: 100% correct, 8 years: 92% correct, 9 years: 83% correct). The scores of the 6 year-old group were approaching mastery levels (6 years: 83% correct).

  - Most incorrect responses were substitutions of the test marker (e.g. climbs/climbed, is climbing/climbed). These types of responses were mostly observed in 6 year-old group.

• **Irregular past tense.** Errors in the area of irregular past tense (item 32) were
observed in the performance of all examined age groups (6 years: 16% correct, 7 years: 85% correct, 8 years: 66% correct, 9 years: 83% correct).

- **Future tense.** Children in the 7, 8, and 9 year-old groups responded with over 90% accuracy on the items evaluating future tense (items 19 and 20). The 6 year-old group responded with 75% accuracy.
  
  - The responses *are going to eat/will eat* were observed in all age groups and were considered correct.

**Derivation**

- **Nouns.** Correct noun derivation was observed in the older groups but not in the younger groups (6 years: 58% correct, 7 years: 62% correct, 8 years: 83% correct, 9 years: 100% correct).
  
  - Children tended to use lexically related nouns instead of derived nouns (rock star/singer; music teacher/singer).

- **Adjectives.** Correct adjective derivation (item 27) was observed in the responses of the older groups but not in those of the youngest group (6 years: 50% correct responses, 7 years: 62% correct responses, 8 years: 100% correct, 9 years: 100% correct).
  
  - Children in the 6 and 7 year-old groups tended to make errors related to inappropriate use of the adjective derivational suffix /ed/ (e.g. lucked/lucky).

**Comparatives and Superlatives**

- Younger children had difficulty with comparative and superlative use but had reached mastery level by 9 years of age (6 years: 62% correct; 7 years: 75% correct; 8 years:
Inaccurate responses included the use of regular comparative structure (e.g. bestest/best, fasterest/fastest, biggest/best, goodest/best, faster/fastest, gooder/better) or the deletion of the comparative marker (e.g. fast/faster, good/better). Such mistakes were most common in the responses of the 6 year-olds. The most frequent error observed across age groups was the use of gooder/best.

**Pronouns and Copulas**

Difficulties using pronouns and copulas were evident in the typically developing Arabic-English speaking children used in this study, however, incorrect responses may be related to acceptable responses in Arabic.

- **Contractable copula.** In the area of contractible copula use (item 10), children in all age groups demonstrated mastery (6 years: 92% correct, 7, 8, 9 years: 100% correct).

- **Uncontractable copula.** In the area of uncontractable copula use (items 25 and 26) children in the 7, 8 and 9 year old groups demonstrated mastery (7 years: 100% correct, 8 years: 92% correct, 9 years: 92% correct). The 6 year-old group scored slightly lower (75% correct). Most correct responses across groups included the use of **he is/they are.**

- **Possessive pronoun.** The 9 year-old group was the only group to demonstrate mastery in the realm of possessive pronouns (item 15) (6 years: 59% correct, 7 years: 75% correct, 8 years: 67% correct, 9 years: 100%).

  - Children in all age groups would have reached mastery had **his/yours and mine/yours** been acceptable responses.
• **Objective pronoun.** The 9 year-old group was the only group to demonstrate mastery in the area of objective pronouns (6 years: 70% correct, 7 years: 71% correct, 8 years: 83% correct, 9 years: 92% correct).
  
  o Children in all groups substituted *us* for *them*, especially in the 7, 8 and 9 year-old groups. Children in the 7 and 8 year-old groups would have also reached mastery had *us/them* been accepted as correct responses.

• **Subjective pronouns.** All children had difficulty with subjective pronouns as tested in items 30 and 31 (6 years: 41% correct, 7 years: 50% correct, 8 years: 67% correct, 9 years: 75% correct).
  
  Even if alternate responses were accepted as typical of second language learning (e.g. *the school choir, the class, them*), children’s performances would have been below 90% in the 6, 7, and 8 year-old groups (with the acceptance of alternate responses accuracy levels would have increased to: 6 years: 62% correct, 7 years: 75% correct, 8 years: 87% correct, 9 years: 100%).

• **Reflexive Pronouns.** Children also had difficulty with reflexive pronouns as tested in item 28 (6 years: 46% correct, 7 years: 69% correct, 8 years: 83% correct, 9 years: 75% correct).
  
  o Even if alternate responses were accepted as typical of second language learning (e.g. *hisself/himself*) performances would have remained below 90% accuracy in the 6 and 7 year-old groups (with acceptance of alternate responses accuracy percentages would have increased to: 6 years: 71% correct, 7 years: 69% correct, 8 years: 92% correct, 9 years: 92% correct).

Other common error responses by typically developing Arabic-English
speakers were him/himself and her/herself. These responses were most common in the 6 through 8 year-old groups.

III. Transfer effects observed in the performances of typically developing Arabic-English bilinguals: Recalling Sentences Subtest

Sentence Recall

- Additions/substitutions/deletions of the article “the” and/or “a”. Article deletions and additions were mainly observed in the sentence recall of children in the 7 and 8 year-old groups. See specific examples:
  - 7.10 year old male, consecutive English learner: the boy bought a book for his friend who likes short stories/the boy bought the book for his friend who likes short stories; the coach gave the trophy to the team that won the track meet on Saturday/coach gave the trophy to the team that won the track meet on Saturday
  - Substitution of the reflexive pronoun himself. Several children substituted the reflexive pronoun himself with hisself. These substitutions were mainly observed in the 6 year-old group.
    - 6.6 year old female, consecutive English learner: the boy fell and hurt himself/the boy fell and hurt hisself; the kindergartner cannot cross the street by himself
  - Tense Agreement. Children made several tense-based errors during sentence recall. Specific examples are as follows:
• 7.10 year old female, consecutive learner of English: *after the students finished the book, the teacher will ask them to write a report* / *after the students finished the book, the teacher asked them to write a report*; the coach *cannot find the uniforms that the team wore last year* / the coach *could not find the uniforms that the team wore last year*

• 8.1 year old male, consecutive learner of English: *the coach could not find the uniforms that the team wear last year* / *the coach could not find the uniforms that the team wore last year*

Similar substitutions were observed in the productions of the verb *to be* in the early age groups.

• 6.1 year old male: *were the van followed by the ambulance* / *was the van followed by the ambulance*

Such substitutions were observed in all age groups.

- **Possessive marker deletion.** Several 6 year-old children deleted the possessive marker (‘s) (e.g. cat food/cat’s food).

- **Passive structure: Deletion or additions.** Deletions of the by phrase were mostly observed in responses of participating 6 year-olds during sentence recall of passive sentences (e.g. *the tractor following the bus* / *was followed by the bus*; *the book was not return to the library* / *the book was not returned to the library*). Furthermore, additions of the by phrase were observed in the sentence recalls of several 7 and 8 year-olds. Substituting the active verb for the passive verb was also observed among children in these groups (e.g. *return/returned*). Some examples of this are as follows:

• 7.10 year old female, simultaneous learner of English and Arabic: *the book*
was not returned by the library by the teacher/the book was not returned to the library by the teacher

- 7.5 year old male, consecutive learner of English: the book was not return by the library by the teacher/ the book was not returned to the library by the teacher

- 8.6 year old female, consecutive learner of English: the book was not returned by the library by the teacher/ the book was not returned to the library by the teacher; the rabbit was not put by the cage by the girl/ the rabbit was not put in the cage by the girl

- **Relative pronoun errors.** Several deletions and/or substitutions of the relative pronouns (that/who; -/who; for/that) were observed in children’s sentence recalls. Substituting that for who was frequently observed in all age groups (e.g. my mother is the nurse that works in the community clinic/my mother is the nurse who works in the community clinic).

- **Singular/plural substitutions.** Several singular plural substitutions were seen in children’s imitations across groups but were more frequent in the 6 and 7 year-old groups. A specific example of this is as follows:
  - 6.3 year old female, simultaneous English-Arabic learner: tractors/tractor; teams/team, computer/computers.

The most common substitution was boy/boys when repeating the target sentence, didn’t the boys eat the apples.

- **Agreement based errors.** Agreement based recall inaccuracies were recorded in
all age groups.

- Specific agreement violations were deletions of agreement markers (e.g. work/works when asked to repeat the sentence, my mother is the nurse who works in the community clinic), inappropriate tense assignment (e.g. sell/sold, when asked to recall the students collected and repaired the toys, and sold them at the fair; wear/wore in, the coach could not find the uniforms that the team wore last year) and other substitutions (e.g. is/was; could/can).

Several lexical and preposition substitutions were observed during this subtest as well.

<table>
<thead>
<tr>
<th>Age</th>
<th>Substitution</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 years</td>
<td>bus/ambulance(5), big/brown(8), anybody or somebody/anyone (9), coach/team(14), kindergarten/kindergartner(10), castle or build castle/playcastle(11), made/built(11), tomorrow/tonight(12), sell/buy(15), school/class(15), communities/computers(19), wall/board(19), so/very(20), boy/coach(14), red shirt/uniform(14), got/bought(17), by/before(18)</td>
</tr>
<tr>
<td>7 years</td>
<td>big/brown(8), anybody/anyone(9), kindergarten/kindergartner(10), castle/playcastle(11), since or ~/because(12), boys/team(14), get or went to buy/stopped to buy(15), but/even though(15), worker or one/nurse(16), by, soon, or after/before(18), come or made/donated(19), person/student(20), happy/excited(20), children/students(22), prepared/repaired(24)</td>
</tr>
<tr>
<td>Age</td>
<td>Substitution</td>
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<tr>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>put on/put in(6), -/ate all of(8), stay all/stayup(12), ate at tonight/late</td>
</tr>
<tr>
<td></td>
<td>tonight(12), returned to/in(13), from/to(13), to class/for class(15),</td>
</tr>
<tr>
<td></td>
<td>award from the art show or award in the art show/award at the art show(20)</td>
</tr>
<tr>
<td>7</td>
<td>on/in the cage(6), ate all the/ate all of the(8), stay late up/stay up late</td>
</tr>
<tr>
<td></td>
<td>(12), to/for(15), works at/in(16) by/before noon(18)</td>
</tr>
<tr>
<td>8</td>
<td>at/in the(16), to/for his friend(17), by/before(18), from/at, sell tickets</td>
</tr>
<tr>
<td></td>
<td>for /sell tickets to the dance (21), at/on Saturday(23)</td>
</tr>
<tr>
<td>9</td>
<td>into the cage/in the cage(6), by/before(18), walked to/ across (29)</td>
</tr>
</tbody>
</table>
IV. Transfer effects observed in the performances of typically developing Arabic-English bilinguals in the Recalling Sentences Subtest

Style: possible cultural effect

- **Sentence length.** Overall, participating children produced longer sentences than those sentences presented in the CELF-4 manual. This may indicate a possible cultural style effect. Additionally, an examination of children’s performances on this subtest revealed that children tended to produce third and first form productions (I and he) to describe presented pictures.

- **Articles.** Additions or deletions of the article the and/or a were observed in the formulated sentences of 6 and 7 year-olds (e.g. *children are playing/the children are playing; gave me the food/gave me food; the mother gave the kid food/the mother gave the kid the food*).

- **Subject drop.** Several 6 year-old children dropped the subject in their formulated sentences. This reflects Arabic sentence structure (e.g. forgot/I forgot; running/they are running).
  - **Prepositions.** Several 6 year-old children made errors with prepositions (e.g. *playing on the video/playing video*).

- **Word order.** The following English productions were consistent with Arabic word order:
  - *Always the boy takes a long time to wash his teeth and wash his hands. (3)*
  - *Never the dog stooped. (6)*
  - *The boy is quickly running. (12)*
  - *The boys are playing with their dad a video game; A video game with their*
Most of these productions were observed in productions of the 7 and 8 year-old children. Instances of placing the adjective before the verb were also seen in the 8 year-old group.

- **Tense agreement.** Present progressive and future tense errors were more frequent at the age of 6 years, while present tense errors were more common in the sentences of the 7 year-olds. Specific examples are shown below:
  - The children is playing. (1)
  - Until the store is open then they will go buy a bicycle. (21)
  - If the bus stop/stops. (13)
  - Before she finish/finishes shopping. (15)

### Conclusion

Assessing language abilities is one of the most important roles of a speech-language pathologist (SLP). Bias in the assessment and evaluation of children from culturally and linguistically diverse (CLD) population has been largely documented in the literature (For a review on language assessment with developing bilinguals See Konhert, 2008). In this resource, we focused on the inherent examining bias of standardized assessment tools, specifically the CELF-4, in the language assessment of Arabic-English speaking children. This approach was used for several reasons. First, many Arabic speaking children often appear to be English dominant speakers due to Arabic attrition (See earlier section on Arabic heritage speakers). Second, as mentioned earlier in this resource (see the chapter on SLPs in the Arab world) there are very few
Arabic-speaking SLPs and appropriate assessment tools for Arabic-English bilinguals.

Third, the practice of using standardized assessment tools (specifically CELF 4) in assessing children from CLD population is well documented in the field of speech and language. This does not disaffirm the recommendation to assess a child in all of his/her languages, nor does it dissuade doing a thorough assessment using a variety of tools and strategies before making a clinical decision.

We anticipate this resource will assist SLPs in their interpretation of children’s responses on the CELF-4 to minimize the effect of linguistic-cultural biases as well as limited experience in English. We assume that when assessing Arabic-English bilinguals, the CELF-4 will not be the only source of assessment information but will be used in conjunction with other information gathered by the evaluating SLP. We hope that as a result of this resource, SLPs will be aware of the caveats of using CELF-4 standard scores when assessing Arabic-English bilingual children. This resource was designed to provide information on the non-standardized use and interpretation of the CELF-4 by enabling SLPs to identify errors that appear to be the result of first language transfer effect, cultural background interference, and dual language acquisition in Arabic heritage speakers (See Konhert, 2008 for a review on the use of formal assessment in evaluating developing bilinguals).

As a result of the increase of Arabic-speaking English Language Learners (LLEs) in the U.S. (Batalova & Margie, 2010 and the increase in referrals for language evaluation of Arabic-English speaking children, further educational tools are needed to insure that SLPs separate language disorders from language differences in this population. Resources providing information related to the use of informal assessment
tools in language assessment (such as speech sampling analysis guidelines for assessing Arabic and English) are much needed.

This resource did not report on children’s Arabic abilities (which were assessed informally and will be reported in future publication), however, the reported language attrition in heritage speakers learning English as a second language should be considered when making clinical decisions. SLPs tend to generalize the assumption that if intrinsic language learning problems are present, error patterns will be observed in both languages of a bilingual child. SLPs need to be cautious of making such a generalization when assessing Arab-American children as this may not apply to Arabic heritage speakers who are learners of English. These children may exhibit grammatical error patterns in both languages that are underlined by incomplete acquisition of both Arabic and English.

We hope this resource provides useable guidelines to reduce bias inherent in the use of the norm-referenced standardized tests such as the CELF 4 in evaluating Arab-American children. This resource is just the first step in our attempt to enhance the quality of assessment services for Arab-American children and will be complemented with the development of alternative assessments for use with Arabic-English speaking children.
References (section I: Introduction)


Batalova, J., & Margie, McHugh (2010). *Top Languages Spoken by English Language Learners Nationally and By State*. Washington, DC: Migration Policy Institute.


**References (section II: Arabic Language)**


Gulf Arabic:


*Arabic Variant Identification Aid* (AVIA), The Center for Advanced Study of Language,
North African dialects:


Egyptian Arabic:


**References (section III: Diglossia, Literacy and Heritage Speakers of Arabic)**


References (section IV: Speech Language Pathology Services in Arabic)


Poplack, S. (1980). Sometimes I’ll start a sentence in English Y Termino En Espanol: 


**References (section V: Cultural background)**


[http://ambassadors.net/archives/issue14/selected_studies3.htm](http://ambassadors.net/archives/issue14/selected_studies3.htm)


Reproductive Biomedicine. Online 5:167–70

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