Companion Teaching Manual III

Requests before Names and Specific Content Words before Core Vocabulary

Begin Language Training
for Children and Adults with
Moderate-to-Severe Developmental Disabilities
and Limited or no Expressive Language
with Requests for
Specific Items and Activities

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To Teachers, Speech-language Pathologists, and Behavior Analysts
who are working with children and adults
with moderate-to-severe
developmental or intellectual disabilities
and limited expressive language repertoires

and

To Those Children and Adults,
especially Those Who are Non-verbal,
who deserve a method of speaking
that is effortless and portable,
and that lasts a lifetime,

and

a communication or language repertoire
that permits them to say
exactly what they want and need to say

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Teaching Requests before Names

Names and Listener Responses Come First

Prior to the seminal applied work of Sundberg, Carbone, Greer, and their colleagues (Sundberg & Partington, 1998; Sundberg & Michael, 2001; Carbone, 2000-2017; Greer & Roos, 2007), language training for verbal children with autism and other developmental disabilities, that is, children who could produce consistently understandable spoken words, but who exhibited limited or no expressive or receptive language, typically began with *names for items* and *listener responses to these names (Lovaas, 1987; Leaf & McEachin, 1999)*. That is, these children were taught to say "cup" in the presence of a 'cup' or 'a picture of a cup' and to point to or touch a 'cup' or 'a picture of a cup' when someone said "point to the cup" or "touch the cup". Language training for older children and adults, although relatively uncommon, also began with *names* and corresponding *listener responses*. Non-verbal learners, that is, those who could not produce consistently understandable spoken words, were generally taught *only the listener responses*[1].

This language training was typically conducted by speech-language pathologists, who referred to *naming items* and making *listener responses to these names* as examples of *expressive and receptive language*. Language training was also conducted by behavior analysts, who referred to these skills as *expressive and receptive object labels* (Lovaas, 1987; Leaf & McEachin, 1999). Horne and Lowe(1996) described these two skills as *bi-directional naming* or *the name relation,* and suggested that this relation is *the basic unit of verbal behavior* (receptive and expressive language).

What about Requests

Naming and *listener responding* were described by Skinner (1957) and behavior analysts, who have pursued his analysis of verbal behavior, as *tacts and listener responses* (Catania, 1973, 1979; Michael, 1984, 1985; Sundberg, 1998; Sundberg & Partington, 1998; Sundberg & Michael, 2001; Greer & Ross, 2007; Sundberg, 2008). This analysis has suggested that teaching children and adults to provide names (i.e., *tacts*) as their first *speaker responses*, ignores motivational variables (Michael, 1982, 1983, 1988) and that requests, also called *mands*, which are largely controlled by these variables, should be taught before *tacts* (Reichle, Rogers, & Barrett, 1984; Halle, 1987; Reichle, Mirenda, Locke, Piche, & Johnston, 1992; Shafer, 1994; Sundberg & Partington, 1998; Sundberg & Michael, 2001; Sundberg, 2008).

Others, including the first two authors of this manual, have suggested that teaching *tacts* first ignores the pragmatic value of language, while emphasizing its *form* rather than its *function* (Shafer, 1994; McGreevy, Fry, & Cornwall, 2012, 2014). From a learner's perspective, *teaching names or tacts first* ignores what most children and adults with limited speaking repertoires want to say and the circumstances in which they want to say it — *making requests* for preferred items, activities, and people *when they want access* to the same.

Experts disagree on whether *names* or *requests* emerge first in typically-developing children. Which typically emerges first, however, is a less compelling justification for the content of early language training than what learners *want to say* and what happens when they *can't say it*. Learners who can't *make requests* often exhibit functionally equivalent problem behavior, that is, behavior that achieves the same or a similar outcome. And, learners who cannot make *requests* are much more likely to exhibit problem behavior than those who can't *provide names*.

When Names and Listener Responses are taught First

Let's assume that, as a result of instruction, *names of a few items and corresponding listener responses to those same items* represent most of the early speaking and listening repertoire of a verbal learner with autism or some other form of developmental disability. If some of this repertoire of names were to occur as requests, the learner would be experiencing either *stimulus generalization* or *stimulus control*

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[1] Some non-verbal learners with severe problem behavior were introduced to *functional communication training* [Carr & Durand, 1985]. This set of procedures, if successful, resulted in only a single response that acquired the same function as current forms of problem behavior and, as a result, cannot be considered language training.

transfer, the outcome of specific teaching procedures described by behavior analysts. For these learners with limited speaking and listening repertoires, *generalization often depends on a number of elements (Stokes & Baer, 1977; Liberty & Billingsley, 1988) that are not part of routine instruction or language training, and, as a result, is not likely to occur* (Reichle, Rogers, & Barrett, 1984; Lamarre & Holland,1985; Caro & Snell, 1989; Twyman, 1996). Also, *stimulus control transfer* procedures (Touchette, 1971; Hall & Sundberg, 1987; Sundberg & Partington, 1998; Carbone, 2000-2017; Greer & Ross, 2007; McGreevy, Fry, & Cornwall, 2012, 2014)) are a part of the repertoire of a relatively small number of teachers, speech-language pathologists, and practicing behavior analysts, and hence, not likely to result in requests that were once names. For these learners, the direct teaching of requests, as if names had never been taught, is very likely to be necessary (Hall & Sundberg, 1987; Williams & Greer, 1993; Ross & Greer, 2003; Tsiouri & Greer, 2003; Nuzzolo-Gomez & Greer, 2004).

Now let's assume that a learner is non-verbal and, as a result of instruction, exhibits *names of a few items* using standard signs and makes a few *listener responses to these same items* by pointing to the items and pictures of the items. If some of this repertoire of signed names were to occur as requests, the learner would again be experiencing either *stimulus generalization* or *stimulus control transfer.* As just described with verbal learners, however, neither of these outcomes is likely to occur. And, again, the direct teaching of requests, as if names had never been taught, is very likely to be necessary (Hall & Sundberg, 1987; Williams & Greer, 1993; Ross & Greer, 2003; Tsiouri & Greer, 2003; Nuzzolo-Gomez & Greer, 2004).

Now, finally, let's assume that a learner is non-verbal with no effective, alternative method of speaking, and thus *no way to exhibit names.* As a result of instruction, he makes *only listener responses* by pointing to a few named items and pictures of items. If some of this repertoire of listener-responses-to-pictures were to occur as requests, the learner would again be experiencing either *stimulus generalization* or *stimulus control transfer.* As just described with both verbal and other non-verbal learners, however, neither of these outcomes is likely to occur. And, again, the direct teaching of requests, as if names had never been taught, is very likely to be necessary (Hall & Sundberg, 1987; Williams & Greer, 1993; Ross & Greer, 2003; Tsiouri & Greer, 2003; Nuzzolo-Gomez & Greer, 2004).

Requests Should Come First

Children and adults with speaking repertoires of a few words or signs and corresponding listening repertoires may sound and look good to others, but these repertoires fail to permit them to *say what they want and need to say,* and make them vulnerable to the occurrence of problem behavior.

Since requests will most likely need to be directly taught anyway, why not teach them first, as many have previously recommended (Halle, 1987; Reichle, Mirenda, Locke, Piche, & Johnston, 1992; Shafer, 1994; Sundberg & Partington, 1998; Sundberg, 2008; McGreevy, Fry, & Cornwall, 2012; Carbone, 2000-2017), along with listener responses that involve learner safety, like responding as a listener to "stop" in dangerous situations.

And, finally there is the relevance of the *naming* or *tacting* repertoire. *Making requests* is useful *as it is*; *naming* or *tacting* is not. Its relevance lies in its contribution to advanced listener responding (through *joint control*), answering questions with meaning (meaningful *intraverbals*), and conversation. And, for children and adults with limited speaking and listening repertoires, those goals *may be* somewhere down the road, while making requests is waiting *at the front door*.

Teaching Specific Content Words before Core Vocabulary

In recent years, there has been considerable discussion regarding what is called *core vocabulary* — small sets of simple, familiar words that are used frequently and across contexts by various age groups. *Core vocabularies* are used and often discussed today in the context of certain types of alternative methods of speaking for non-verbal learners, namely, AAC devices with speech generation (Cross, Baker, Klotz & Badman, 1997), but are also used with signs and spoken words.

Core vocabularies are based on language samples of typically-developing young children (Marvin, Beukelman & Bilyeu, 1994; Banajee, 2003), who exhibit 200-400 words, and indicate that certain words occur more frequently than others. Core vocabularies developed from these language samples include nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions, interjections, modals, and quantifiers. Core vocabularies include a few *content words* with semantic function, called *fringe words*, that is, nouns, main verbs, adjectives, or adverbs that convey meaning and that are necessary for an audience to respond effectively to *what was said.* Core vocabularies, however, are composed primarily of *function words* (also called *grammatical function words*), that is, pronouns, prepositions, conjunctions, interjections, modals, quantifiers, and auxiliary verbs that are typically part of longer utterances, that express grammatical relationships with other words within a phrase or a sentence, that specify the attitude or mood of the speaker, and that are often required of learners with advanced language skills.

Table 1 provides an example of a core vocabulary for young children, which includes 28 words, 7 of which are *content (fringe) words* and 21 of which are *function words*.

Table 1. An Example of a Core Vocabulary for Young Children

content (fringe) words	more	go	some	help	eat	drink	play
(grammatical) function words	that	no	yes	my	the	want	mine
	I	a	it	you	what	on	here
	in	out	off	and	get	your	is

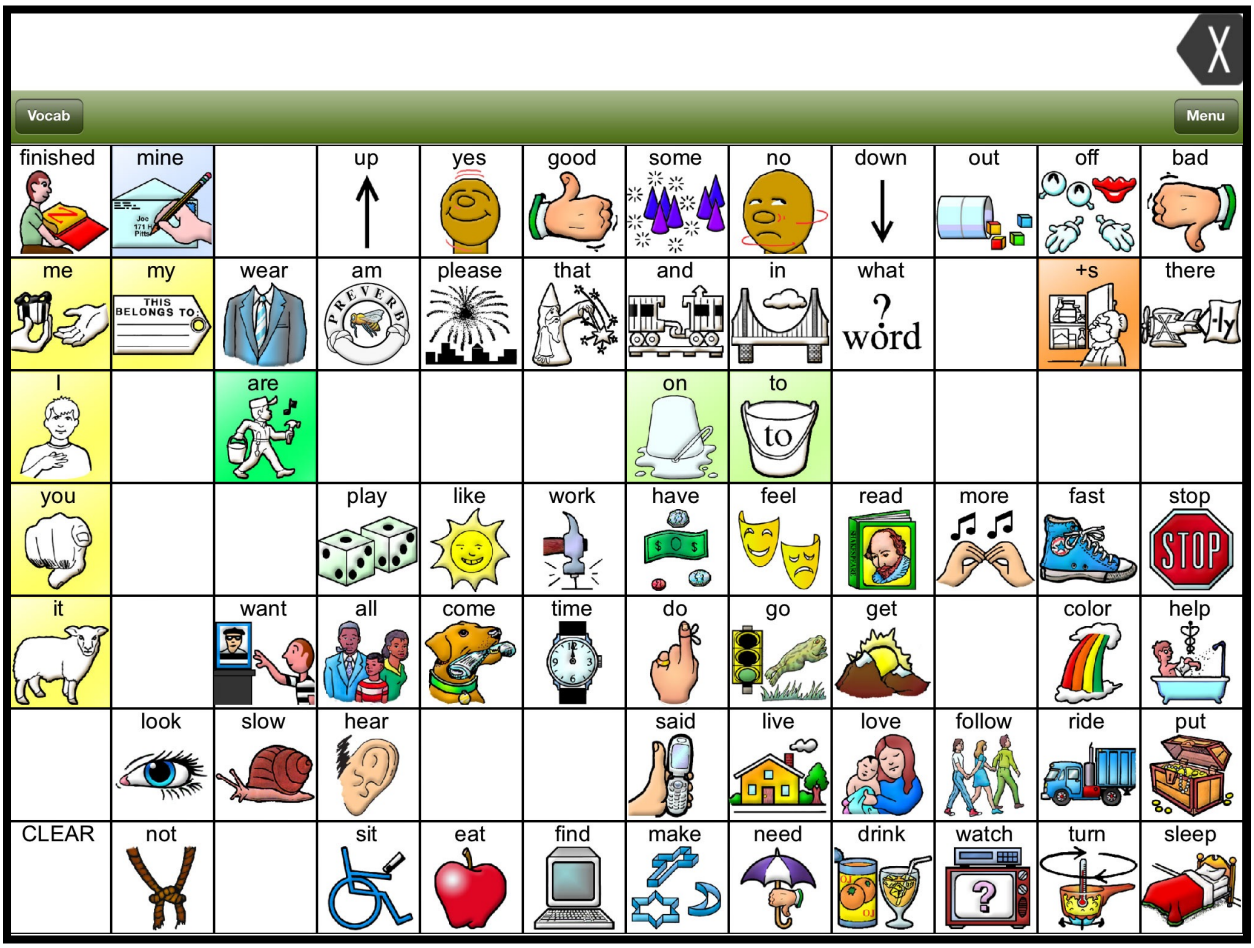
In an investigation of the vocabularies of individuals with moderate-to-severe developmental disabilities, Mein and O'Connor (1960) reported the existence of core vocabularies. Snell, Chen, and Hoover (2006) reviewed research from 1997-2003 and concluded that, for children with severe developmental disabilities using augmentative and alternative communication, core vocabularies can be an effective form of intervention. Snodgrass, Stoner, and Angell (2013) demonstrated that a few individuals with dual sensory impairments could learn to use a conceptually-referenced core vocabulary as part of an initial AAC vocabulary. In recommending the use of core vocabulary with AAC devices, Baker, Hill, and Devylder (2000) assumed that this inclusion would immediately facilitate conversation in non-verbal children and adults with moderate-to-severe developmental disabilities.

While core vocabularies have been shown to be effective with phonological disorders [unintelligible speech] (McIntosh & Dodd, 2009), we could find only the limited, aforementioned evidence of their effectiveness in building *language repertoires in non-verbal children or adults with moderate-to-severe developmental or intellectual disabilities and limited or no use of an alternative method of speaking* (Snell, Chen, & Hoover, 2006; Snodgrass, Stoner, & Angell, 2013). We could find no evidence supporting the use of core vocabularies in building the *early language repertoires* of these children and adults. In spite of this lack of evidence, some speech-language pathologists are now recommending that core vocabularies *comprise 'the first words of these children and adults'*, especially those who are learning to use AAC devices with speech generation.

Core vocabulary is an integral component of the *LAMP software program* (*Language Acquisition through Motor Planning*), which is often used with AAC devices with speech generation, and which is based on the *Unity Language System* and a hypothetical construct known as *motor planning*. Advocates of *LAMP* recommend that core vocabulary, like the one shown in Table 1, comprise the first words taught to non-verbal children, even those with moderate-to-severe developmental or intellec-

tual disabilities and limited or no expressive language. An example of *LAMP* on an AAC device is shown in Table 2.

Table 2. An Example of *LAMP*



The authors of this manual have encountered a number of situations in which professional practitioners, including speech-language pathologists, have recommended that non-verbal children with effective and efficient picture selection or signing repertoires abandon their current alternative method of speaking in favor of a speech-generating device with *LAMP* and a *core vocabulary*.

These recommendations have occurred in spite of a considerable amount of data on early language development, including data from a seminal study by Brown in syntactic and morphological development (Brown, 1973), which suggested that the first 50 words are almost entirely generalized and specific content words, and a study of 1,803 children by Bates and colleagues (Bates, et al., 1994) which found that language begins with almost exclusively *generalized* and *specific content words* like those shown in Table 3, begins to include a few grammatical function words, like those shown in Table 1, after the child's expressive language repertoire includes 50 content words, and only begins to include more grammatical function words when this repertoire exceeds 400 words.

Table 3. Content Words that Commonly Occur in Early Language

generalized content words	eat	drink	go	play
specific content words	cookie	juice	car	ball

Data from Bates and colleagues (Bates, et al., 1994) also suggested that introducing grammatical

function words prior to the acquisition of 400 words may actually be counter productive. A summary of this study and an informative discussion regarding core vocabulary has been provided by Pyramid Educational Consultants (McCleery, 2015) and can be found at https://youtu.be/ckYliMcmeMc.

Some may suggest that the distinction between content and function words is arbitrary at best, but everyday experience suggests that some words *build sentences* (grammatical function words), while other words *convey messages* (content words) that audiences can respond to effectively without other words or grammatical structure. For example, if a learner selects pictures or forms signs to request a '*hot dog*' and a '*Coke*' (content words), the only pictures or signs that are required for the audience to *understand* and respond effectively are '*hot dog*' and '*Coke*'. Adding '*May I have a*' and '*and a*' (grammatical function words) form a sentence, but require additional effort with no communicative advantage for the speaker. This example, and many others from everyday living, further suggest the value of *specific content words*. For example, if the learner had selected pictures or formed signs for '*more*, *eat*, or *help*', the audience would have understood *that he wanted or needed something*, but wouldn't have known *what that something was* and would not have been able to respond effectively. The audience would have had to ask a question and the learner, if he had not been taught *specific content* words with pictures or signs, would not have been able to respond effectively, except by pointing to what he wanted, which suggests that the signs for '*more*, *eat*, or *help*' added effort but resulted in no communicative advantage for the learner. In sum, although *content words* have an advantage over grammatical *function words* for learners with limited language skills, *specific content words* have an even greater advantage.

Those who use core vocabularies tend to emphasize the *form* of words, rather than their *function* or *pragmatic value*, that is, they tend to ignore *what those words accomplish* for the speakers who use them. For example, most early words are used to make requests, like *cookie* and *juice*, or, less effectively, *eat* and *drink* (*content words*). It is impossible to make requests to which an audience can respond effectively with words like *want*, *I*, *a*, and *that* (*grammatical function words*) without pointing to items, which renders the words unnecessary[2].

Core vocabulary, with its early emphasis on grammar, syntax, sentence structure, and the length of a *picture selection utterance*, seems rooted in the least dangerous assumption (Donnellan, 1984), that is, that we should assume that all non-verbal learners understand everything we say, and that with an AAC device, these learners will quickly be capable of participating in conversations. While this assumption reminds us that we should not talk around these learners as if they do not understand us, effectively as if they are not there, it may be counter productive in terms of teaching them to function effectively as a speaker.

In children and adults with moderate-to-severe developmental or intellectual disabilities and limited or no spoken-word communication or language, however, core vocabulary and its early emphasis on the *structure and length* of picture selection *before strength* (Carbone, 2000-2017) ignores what is known about early language development (Brown, 1973; Bates, et al., 1994). Many of these children and adults will find *utterances* of two or three signs, pictures, or pic-symbols impossible or, at best, extremely effortful, and this unnecessary response cost may also evoke problem behavior. Grammar and syntax will never matter to many of these children and adults and will result in a barrier to saying what they want and need to say. And, most importantly, the preponderance of evidence does not support the inclusion of a core vocabulary in the early language training of these children and adults, and should only be used when they have acquired a speaking repertoire of 400 or more words.

In *Essential for Living*, which is designed for these children and adults, the teaching of expressive language begins with one-word *requests and specific content words* like '*cookies*', '*iPad*', and '*blanket*'(see skill *R7,* the first requesting skill — *EFL Hand-book*, p. 120). This teaching of *one-word specific-content requests* continues through skill *R70* with occasional one-word requests that include generalized content words like *help*, *play* (*hang out*), *later*, (is this) *right*, and *more* (see *EFL*

[2] For a discussion of specific grammatical function words and morphemes, along with their controlling variables, readers are referred to a seminal paper and online course by Carbone (2013).

Handbook, skills *R14*, *R18*, *R19, R33*, *R35*, *R37-39, R50-51*, *R63*). Then, skill *R71* begins with two-word specific-content requests like '*crackers*, *juice*' followed by skills *R77-79* which include three and four-word specific-content requests like '*vanilla pudding*, *cookie*', 'blue *shoes*, *red socks*', and '*Anne*, *mall, cinnamon roll*'. Then, and only then, with skills *R80-88,* are grammatical function words introduced, along with minimal sentence structure and questions like '*may I have chocolate ice cream and cookies*' and '*where are my blue socks*'.

After listener responses that involve safety and daily routines, along with recognitions, retrievals, and relocations that are part of commonly-occurring events, additional expressive language skills — naming, answering questions and conversation — are taught using primarily content words, with only the gradual introduction of grammatical function words.

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