MINSPEAK® AND UNITY®
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I. Historical Background

Minspeak was introduced in the early 1980's by Bruce Baker. Minspeak uses pictures called icons and takes advantage of our normal tendency to associate more than one meaning with an item. For example, a picture of an apple might represent not only "apple" but also any other concept we can associate with apple, such as "fruit," "red," "juicy," "crisp," and "bite."

By using multi-meaning icons, Minspeak uses a limited number of icons to represent a very extensive vocabulary. With a small number of icons, the requirements for access are reduced and minimal keystrokes are required to retrieve vocabulary.

Although Minspeak was originally used to represent sentences, it was soon evident that individuals, even those with significant cognitive challenges, were more interactive communicators when given a set of single words rather than whole messages.

Several Minspeak Applications Programs, or "MAPs," emerged. Each of the MAPs was developed for a designated set of individuals and there was no planned coordination for transition from one MAP to another. When it was time to change to another MAP, extensive relearning was required.

II. Unity

Unity was developed to minimize the difficulty in transitioning from one vocabulary to another. It is designed to grow as the individual's communicative ability develops.

Unity is based on a consistent set of icons, with a consistent arrangement, and consistent icon sequences for representing language. This promotes automatic use, as well as minimizing relearning when transitions in vocabulary are made.

The consistency in Unity also reduces the demands on facilitators, teacher, parents, and therapists. Using Unity, they can build lessons around a common vocabulary, set of icons, and icons sequences. This eliminates the need to create, teach and learn multiple symbol representations. A therapy idea that is developed for one Unity user can be used successfully with another Unity user, even if the second individual is at a different point within the Unity vocabulary.

III. Cognitive and Age Ranges

Unity can start out at a very basic point, such as having one icon represent one message. It can build systematically from this point to potentially offering thousands of words. Because of this flexibility, Unity is appropriate for persons of almost any cognitive level or stage of language development.

IV. What Words to Use

An augmented communicator whose communication device provides whole messages is able to communicate only that vocabulary which is provided for him/her. However, someone using a word-based vocabulary has the option of generating his own messages. Sentences and phrases allow for speed in the communication process and should be a part of any AAC vocabulary set, but single words should not be excluded. Unity is a word-based vocabulary with sentences and phrases included.

There are more than 200,000 different words in English. About 20,000 of them are considered "common" and used by everyday people. By the time speaking children are two years old, they use about 2000 different words in a single day. By age ten, they might use as many as 5000-7000 words in a single day. (VanTatenhove 1996)

The task of teaching such a large vocabulary seems virtually impossible. This leads us to study "core" vocabulary, or the words that occur most frequently. In a 1987 study, Vanderheiden and Kelso discovered that the 50 most frequently occurring words account for 40 to 50% of the total words communicated, while the 100 most frequently occurring words account for 60% of the total sample.

In Marvin, Beukelman, and Bilyeu's 1991 study of preschool children, the 50 most frequently occurring words represent approximately 60% of the total sample, while the 100 most frequently occurring words account for 73% of the total sample.

In a 1992 study by Adams, Romski, Deffebach, and Sevcik, 12 youths with moderate to severe mental retardation were studied. The youths had been using an augmentative communication system that provided only primary nouns. The subjects were given social regulative symbols such as "please" and "I'm finished." The social regulative words "were used as soon as they were introduced and their availability expanded the focus of conversation both at home and at school." According to the authors, "the rapidity with which the subjects in this study adopted social regulative lexigrams suggests that terms that lack ready picturability are not necessarily more difficult for people to use. Our findings suggest the symbol vocabularies, which youth with severe mental retardation can learn, may have been underestimated by limiting their composition to concrete nouns."

"Certain words such as "no" or "more" have broader application to objects and events than other words, such as "cookie" or "car" and thus may be heard more often and will serve the child more frequently in his or her effort to communicate," according to Bloom and Lahey, 1979.

Core vocabulary consists of the most frequently occurring words. Studies have shown that core vocabulary is remarkably consistent across speaker, age, topic, and cognitive ability.

Fringe vocabulary refers to the less frequently occurring words that are specific to a speaker or a situation. In this familiar nursery rhyme, the fringe vocabulary is bold and the remaining words are core vocabulary.

> **Humpty Dumpty** sat on a wall.
> **Humpty Dumpty** had a great fall.
> All the **king's** horses and all the **king's** men
> Couldn't put **Humpty** together again.

V. Words Have Multiple Meanings

Children and adults using word-based systems often create their own combinations with new meanings. When a toddler says "me go" he may mean "I want to go outside," "I need to go to the bathroom," or "May I go with you?"

Here is an example of a word with multiple meanings:

Back off Big Daddy	**Back** up the disk
Touch your **back**	**Back** up the car
You're **back** again	Who will **back** me up if it doesn't work
He is the most **back** woods person I know.	

Although the meaning of a word may vary, the articulation of that word remains the same. Unity would handle this word in a similar manner. The word "back" is stored under one consistent symbol sequence and can be used for any of the varying meanings, which parallels how "back" is used in spoken English.

VI. Motor Planning and Language

Where is the "q" on the keyboard and what letter is next to it? For those of you who type, the motor movement may have been automatic, requiring less thought; you may only be able to retrieve it by positioning your hands for typing. Any learned movement pattern does not just happen, but is practiced repeatedly. (Bly, 1963; Campbell, 1988; Guild, 1990).

Performing a motor movement repeatedly in a consistent pattern improves performance. Athletes refer to this as muscle memory. In AAC, we refer to it as automaticity. Unity incorporates consistent movement patterns, permitting the user to develop automaticity. Because Unity maintains consistent placement of icons from one overlay to another, the motor patterns do not have to be relearned when transitioning. Some individuals who use Minspeak do not need to see the icons to use their devices because they have developed automaticity. This type of motor movement also allows individuals with visual and motor challenges to be very successful communicators.

VII. Literacy

Karen Erickson, Ph.D., has worked extensively in literacy and AAC. She wrote that literacy learning and Minspeak do not have to be viewed as separate learning processes. She stated that "a potentially synergistic relationship exists between literacy and Minspeak whereby increased competence in one can lead to increased competence in the other." She went on to say "Minspeak can actually enhance literacy learning and vice versa because Minspeak and literacy share some important features: a) both Minspeak and literacy are generative; b) they both are rule based processes of communication; and c) they are both learned through active engagement in meaningful activities and environments."

Frequently Occurring Home and School Words from "Vocabulary-Use Patterns in Preschool Children: Effects of Context and Time Sampling Christine A

Marvin, David R. Beukelman, and Denise Bilyeu *Augmentative and*

Alternative Communication, Volume 10, December 1994

about	can't	get
after	candy	gets
again	car	getting
ah	catch	girl
all	cause	girls
almost	chair	give
already	come	go
also	comes	goes
an	cookie	going
and	corn	gonna
another	could	good
ant	couldn't	great
any	cup	green
are	cut	guys
aren't	day	had
around	did	hair
as	didn't	hand at
different	hands away	
do	has baby	
does	have back	
doctor	haven't bad	
doesn't	he	
bad	dog	he's
ball	doing	her
bathroom	don't	head
be	done	hear
bean	door	hello
because	down	help
before	drink	here
being	duck	here's
bet	eat	hi
better	eating	high
big	else	hill
bird	even	him
birds	everybody	his
bite	everything	hold
black	face	home
blue	fall	horse
both	find	hot
box	finger	house
boy	fire	how
bugs	first	huh
but	five	hum
buy	fixed	I
by	fly	I'll
bye	foot	I'm
call	for	if
came	from	in
can	found	inside

is	off	tape	went
isn't	oh	tell	were
it	other	than	what
it's	ok	that	what's
juice	old	that's	when
jump	on	the	where
jumped	one	their	where's
jumping	only	them	which
just	open	then	while
kind	or	there	who
know	our	there's	who
last	ours	there's	whole
leaves	out	these	why
let	over	they	with
let's	paint	they'll	won't
lift	people	they're	would
like	pet	thing	ya
little	name	things	yes
long	pick	this	yet
look	piece	those	you
looking	play	three	you'll
lot	please	threw	you're
lunch	push	through	your
made	put	time	yours
make	ready	to	
man	really	today	
many	red	together	
may	remember	too	
maybe	ride	top	
me	right	toys	
mean	room	trees	
messy	run	try	
middle	said	trying	
mine	same	turn	
mom	saw	turtles	
mommy	say	two	
more	see	um	
most	she	up	
move	she's	us	
much	show	use	
must	shut	used	
my	side	very	
myself	sit	wait	
Name	so	want	
name	still	wanted	
named	some	was	
need	somebody	wasn't	
never	someone	watch	
new	something	water	
next	sometimes	way	
nice	somewhere	we	
no	stop	we'll	
not	stuff	we're	
of	swing	well	