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To collect word association norms, 100 educable mentally handicapped boys (chronological ages 11 to 16, mental ages 7 to 11.5) responded to 25 nouns from the Mein and O'Connor list of words most commonly used by retarded children. The subjects were individually tested by stimuli typed on cards. The responses of all 100 subjects to the 25 stimulus words were tabulated. Alphabetical listings are provided of the stimuli; following each stimulus are the responses and their corresponding frequencies; the number of subjects failing to respond is also indicated. (JD)

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ORAL WORD ASSOCIATION NORMS FOR  
EDUCABLE MENTALLY RETARDED CHILDREN<sup>1</sup>

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100 educable mentally retarded boys gave oral word-association responses to 25 words of the Mein and O'Connor (1960) list of words most commonly used by retarded children. The responses were tabulated to provide word-association norms for this subject population.

Several investigators (Brown & Berko, 1960; Erwin, 1961; Entwisle, Forsythe & Muuse, 1964; Wicklund, Palermo, & Jenkins, 1965; Semmel, Barritt, & Bennett, 1968) have employed word-association (W-A) norms in the study of children's language and language behavior in a variety of experimental contexts. A study of children's W-A's may lead to an understanding of language processing abilities of both normal and retarded children (Semmel, 1967). W-A studies have typically employed association norms based on the responses of normal children of various ages (e.g., Palermo & Jenkins, 1964; 1966). Relatively little normative data have been collected from retarded children (Gerjuoy & Gerjuoy, 1965; Horan, 1956).

The purpose of the present study was to collect extensive word-association norms from a population of educable mentally retarded (EMR) boys.

Method

Subjects. One hundred EMR boys from the population of Wayne County Child Development Center, Northville, Michigan, were randomly selected for the study. Ss ranged in CA from 11 to 16 years with MA's from 7.0 to 11.5 yrs.

Stimulus Words. The stimulus list was constructed of 25 high frequency noun stimuli randomly selected from the Mein and O'Connor (1960) list of words most commonly used by retarded children. The list of stimulus words is presented in Table 1.

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Insert Table 1 about here  
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Procedure. The Ss were individually tested on the 25 high-frequency noun W-A stimuli. Stimuli were typed on 5" x 8" unlined index cards. The 25 cards were randomized by hand-shuffling prior to presentation to the S. Each S was introduced to the W-A task as follows:

We are going to play some word games today. Now, if you're ready, I'll tell you the rules for the game

In this game, I will read you a word from each of these cards. The idea of the game is for you to say the first word you think of when I say the word to you. You should say just one word and not more than one.

Ss were presented two sample stimuli in order to test their understanding of the task.

#### Results

The responses of the 100 Ss to the 25 stimulus words were tabulated and are presented in full in the following pages. The stimuli are listed in alphabetical order, and following each stimulus are the responses and their corresponding frequencies. The last figure in each response distribution denoted by "No Response" indicates the number of Ss who failed to respond. To obtain transitional probabilities for any stimulus-response pair, divide the frequency (f) of the response by  $N = 100$ .

#### Footnote

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Table 1

Stimulus Words Used In Free Word-Association Task

apple	clock	fork	milk	tree
ball	coat	hand	money	pictures
balloon	cow	horse	mother	snow
bird	elephant	knife	toy	school
boat	flower	man	train	water

<u>APPLE</u>	<u>f</u>	<u>BALL</u>	<u>f</u>	<u>BALLOON</u>	<u>f</u>
eat	29	bat	19	air	16
tree	10	play	18	blow	16
orange	8	baseball	8	bust(ed)	8
pie	6	bounce	3	ball	7
red	5	catch	3	float	7
peach	5	rubber	3	string	7
core	3	throw	3	play	4
food	3	apple	2	fly	3
fruit	3	blue	2	red	3
ate	2	fall(ing)	2	airplane	2
good	2	Football	2	big	2
pear	2	game	2	circus	2
seed	2	hard	2	wind	2
ball	1	toy	2	baby	1
bite	1	air	1	bag	1
box	1	alley	1	basket	1
good	1	bell	1	box	1
jacks	1	bull	1	broom	1
little	1	cup	1	fun	1
nipple	1	dodge	1	high	1
plane	1	doll	1	have	1
rotten	1	foot	1	party	1
salt	1	glove	1	plastic	1
teeth	1	green	1	pop	1
tomato	1	guinea pig	1	pretty	1
worm	1	hall	1	man	1
		hit	1	rubber	1
no response	7	kill	1	toy	1
		net	1	wall	1
		orange	1		
		picked	1	no response	5
		saw	1		
		small	1		
		stable	1		
		superball	1		
		water	1		
		no response	7		

<u>BIRD</u>	<u>f</u>	<u>BOAT</u>	<u>f</u>	<u>CLOCK</u>	<u>f</u>
fly	23	sail(ing)	13	time	47
nest	16	water	13	watch	12
tree	10	ride(s)	9	tick	6
baby	4	canoe	5	wall	4
feather	4	river	5	hands	3
house	4	ship	5	lock	3
animal	3	fish(ing)	4	bell	2
beak	2	float(s)	4	click	2
cat	2	motor	4	numbers	2
eagle	2	house	3	bird	1
plane	2	paddle	3	circle	1
robin	2	airplane	2	cluck	1
bat	1	car	2	dial	1
bee	1	lake	2	fast	1
big	1	shoe	2	got	1
blue	1	bat	1	knock	1
blue bird	1	bathtub	1	minute	1
blue jay	1	beet	1	moves	1
cage	1	big	1	new	1
egg	1	birds	1	sound	1
feet	1	boatride	1	ten	1
geese	1	broom	1	tock	1
girl	1	coat	1	twelve	1
nature	1	fast	1	no response	5
monkey	1	glasses	1		
mother robin	1	moat	1		
pidgeon	1	ocean	1		
saw	1	new	1		
whistle	1	people	1		
wings	1	racing	1		
woody woodpecker	1	row	1		
no response	7	sea	1		
		skiing	1		
		steam	1		
		toy	1		
		no response	4		

<u>COAT</u>	<u>f</u>	<u>COW</u>	<u>f</u>	<u>ELEPHANT</u>	<u>f</u>
wear	23	milk	49	animal	12
hat	13	calf	10	baby	10
warm	11	horse	6	giraffe	8
jacket	8	animal	5	trunk	7
sweater	5	pig	3	jungle	6
boat	4	baby	2	big	5
hanger	4	farm	2	horse	5
new	4	moo	2	bear	3
button	3	sheep	2	circus	3
rack	3	barn	1	fat	3
cold	2	big	1	lion	3
cap	1	brown	1	tiger	3
cloth	1	cap	1	zoo	3
clothing	1	cook	1	adventure	1
got	1	farm	1	ant	1
hang	1	fat	1	cage	1
material	1	feed	1	drums	1
nice	1	field	1	ears	1
old	1	grass	1	excite	1
overcoat	1	hand	1	fin	1
person	1	how	1	giant	1
pocket	1	lion	1	great	1
store	1	ranch	1	heavy	1
zipper	1	see	1	hippototamus	1
no response	7	sow	1	horn	1
		no response	3	hunt	1
				kangaroo	1
				large	1
				monkey	1
				mouth	1
				parade	1
				peanuts	1
				pet	1
				stand	1
				strong	1
				tail	1
				trumpet	1
				tusk	1
				no response	4

<u>FLOWER</u>	<u>f</u>	<u>FORK</u>	<u>f</u>	<u>HAND</u>	<u>f</u>
plant	14	eat	30	finger	22
pot	11	spoon	26	arm	12
garden	7	knife	23	feet	4
smell	6	bent	1	work	4
grow(s)	5	cork	1	band	3
pretty	5	food	1	glove	3
rose(s)	5	foot	1	man	3
daisy	3	fowl	1	wash	3
tree	3	handle	1	body	2
bloom	2	help	1	handle	2
dirt	2	metal	1	hat	2
rain	2	one	1	palm	2
seeds	2	ouch	1	pencil	2
sun(ny)	2	peck	1	use	2
bed	2	rope	1	write	2
tulip	2	silverware	1	broke	1
anniversary	1	sharp	1	candy	1
beautiful	1	use	1	carry	1
bees	1	no response	6	cut	1
bowl	1			face	1
box	1			feel	1
bright	1			fist	1
cake	1			friend	1
died	1			good	1
door	1			grab	1
fruit	1			ham	1
ground	1			handing	1
insects	1			head	1
had	1			hold	1
keep	1			knuckles	1
mother	1			leg	1
nice	1			plane	1
real	1			pig	1
roots	1			skin	1
show	1			shake	1
shower	1			slap	1
spring	1			small	1
stem	1			smooth	1
water	1			thumb	1
no response	4			towel	1
				wiggle	1
				no response	6

<u>HORSE</u>	<u>f</u>	<u>KNIFE</u>	<u>f</u>	<u>MAN</u>	<u>f</u>
ride	27	fork	25	woman	23
saddle	8	cut	16	boy	8
pony	8	sharp	8	father	7
animal	5	blade	5	lady	6
baby	4	gun	3	men	5
cow	4	jack(knife)	3	hat	3
donkey	4	spoon	3	work	3
hay	4	butter	2	big	2
barn	3	butterknife	2	can	2
house	3	case	2	girl	2
stable	3	kill	2	hand	2
colt	2	silverware	2	person	2
big	1	butcher	1	am	1
boy	1	cake	1	any	1
farm	1	carve	1	batman	1
gallop	1	cup	1	dad	1
hair	1	equipment	1	daddy	1
head	1	"fife	1	feet	1
met	1	fight	1	finger	1
morse	1	fine	1	gentlemen	1
mouse	1	hamburger	1	grow	1
mule	1	hand	1	grown-up	1
noise	1	holder	1	house	1
play	1	holster	1	humanbeing	1
race	1	man	1	kids	1
red	1	meat	1	manhole	1
shoe	1	pocket	1	man's	1
strong	1	point	1	mrs.	1
tail	1	silver	1	mother	1
toy	1	stab	1	nice	1
wagon	1	sword	1	parents	1
yard	1	use	1	postman	1
no response	5	no response	7	sad	1
				store	1
				strong	1
				son	1
				suit	1
				talk	1
				tau	1
				no response	8

<u>MILK</u>	<u>f</u>	<u>MONEY</u>	<u>f</u>	<u>MOTHER</u>	<u>f</u>
drink	27	spend(ing)	20	father	56
cow	24	dollars	14	mom	7
glass	8	monkey	5	grand(mother)	3
bottle	6	bank	4	child	2
man	6	pocket	4	lady	2
water	5	wallet	4	love	2
cat	2	buy	3	nice	2
cocoa	2	gold	3	parent(s)	2
cake	1	cash	2	woman	2
calf	1	change	2	baby	1
cereal	1	dough	2	children	1
chocolate	1	honey	2	dad	1
cup	1	penny	2	family	1
farm	1	pay	2	friend	1
good	1	bag	1	good	1
liquid	1	candy	1	help	1
milkman	1	car	1	home	1
trucks	1	cheer	1	kind	1
white	1	clothes	1	men	1
no response	9	cents	1	mouse	1
		food	1	my	1
		got	1	nature	1
		kind	1	pretty	1
		lots	1	wife	1
		many	1	works	1
		metal	1	no response	6
		nickel	1		
		paper	1		
		people	1		
		pocketbook	1		
		purse	1		
		play	1		
		quarter	1		
		rich	1		
		silver	1		
		some	1		
		store	1		
		twenty-five cents	1		
		no response	6		

<u>TOY</u>	<u>f</u>	<u>TRAIN</u>	<u>f</u>	<u>TREE</u>	<u>f</u>
play	45	tracks	25	leaves	16
boy	8	ride(s)	18	apple(s)	9
car	6	car	11	house	7
box	4	go	5	climb	6
gun	4	caboose	3	branch(es)	5
boat(s)	3	fast	3	leaf	5
games	3	engineer	2	plant	5
ball	2	plane	2	flower	4
top	2	run(s)	2	green	4
baby	1	animals	1	birds	3
bike	1	big	1	trunk	3
broke	1	bus	1	bee	2
candy	1	carry	1	big	2
children	1	"choochoo"	1	grass	2
drums	1	chug	1	grow(s)	2
duck	1	city	1	nest	2
house	1	dog	1	bark	1
my	1	engine	1	brown	1
paper	1	electric	1	breeze	1
plane	1	hay	1	eat	1
present	1	horn	1	falls	1
radio	1	house	1	grounds	1
train	1	locomotive	1	insects	1
truck	1	man	1	knee	1
no response	8	passengers	1	limb	1
		places	1	mouse	1
		rails	1	nature	1
		set	1	play	1
		toy	1	pretty	1
		tractor	1	seed	1
		wheels	1	stump	1
		work	1	top	1
		no response	6	wood	1
				no response	6

<u>PICTURES</u>	<u>f</u>	<u>SNOW</u>	<u>f</u>	<u>SCHOOL</u>	<u>f</u>
frame	13	rain	11	learn	24
look	11	cold	9	work	17
paint(ing)	10	ball	8	room	6
camera	8	ice	7	boy(s)	4
hang(ing)	5	winter	7	building	4
pretty	5	snowball	6	house	4
draw(ing)	4	white	5	children	4
people	4	play	5	church	3
color	3	man	4	teacher	3
wall	3	shovel	4	bus	2
book(s)	2	sled	3	arithmetic	1
develop	2	blow	2	big	1
man	2	fall	2	build	1
movie(s)	2	flake(s)	2	class	1
nice	2	grass	2	college	1
paper	2	ground	2	door	1
show	2	outside	2	fire	1
art	1	summer	2	good	1
bear	1	weather	2	help	1
film	1	blizzard	1	home	1
gloves	1	boy	1	in	1
good	1	clouds	1	junkyard	1
got	1	hard	1	like	1
make	1	melt	1	new	1
person	1	out	1	office	1
school	1	sleigh	1	play	1
see	1	snowman	1	place	1
snap	1	sun	1	pool	1
"tooken"	1	throw	1	spool	1
t.v.	1	water	1	spoon	1
no response	7	no response	4	toy	1
				yard	1
				no response	7

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<u>WATER</u>	<u>f</u>
drink	34
swim(ming)	7
glass	6
milk	6
boat	3
river	3
sea	3
blue	2
fountain	2
ice	2
koolaid	2
liquid	2
well	2
wet	2
bath	1
boy	1
door	1
faucet	1
fish	1
good	1
lake	1
lot(of)	1
man	1
melon	1
mud	1
ocean	1
pipe	1
pitcher	1
plant	1
pop	1
pool	1
snow	1
tank	1
tower	1
no response	4