

Supplemental Material S1. Core Lexicon checklists for *Good Dog*, *Carl* and *Picnic* developed by frequency and percentage criteria.

Core lexicon checklists developed by *frequency* criterion for *Good Dog*, *Carl* (nouns)

	20s	30s	40s	50s	60s	70s	80s
1	baby	baby	baby	baby	baby	baby	baby
2	dog	Carl	Carl	Carl	dog	dog	dog
3	Carl	dog	dog	dog	Carl	Carl	Carl
4	mother	crib	crib	bed	bed	back	back
5	mom	mom	back	mother	back	crib	bed
6	crib	bed	bed	crib	crib	bed	boy
7	bed	back	mom	back	mother	mother	mother
8	back	laundry	laundry	mom	mom	laundry	crib
9	room	room	mother	laundry	laundry	window	window
10	laundry	mother	milk	milk	chute	milk	laundry
11	mess	milk	room	room	milk	powder	bread
12	chute	time	chute	window	mess	floor	milk
13	milk	mess	window	mess	powder	chute	powder
14	bread	window	mess	chute	window	bread	floor
15	home	bread	bread	cookie	time	boy	butter
16	window	cookie	chocolate	time	bread	mess	chute
17	time	chute	time	bread	floor	mom	chocolate
18	child	home	cookie	powder	butter	kitchen	puff
19	butter	butter	floor	kitchen	cookie	cookie	child
20	cookie	kitchen	kitchen	floor	chocolate	butter	cookie
21	bath	house	soap	butter	aquarium	chocolate	fish
22	kitchen	chocolate	butter	chocolate	home	thing	head
23	grape	grape	home	home	room	time	time
24	fishtank	bath	grape	grape	soap	aquarium	room
25	soap	floor	fishtank	fish	thing	puff	thing

Core lexicon checklists developed by *frequency* criterion for *Good Dog, Carl* (verbs)

	20s	30s	40s	50s	60s	70s	80s
1	go	go	go	go	go	go	go
2	get	get	get	get	get	get	get
3	put	put	put	look	look	look	look
4	look	take	look	put	put	put	put
5	take	make	have	take	take	have	take
6	come	run	take	have	have	take	have
7	have	have	come	clean	come	come	come
8	play	come	play	come	run	see	play
9	make	decide	run	play	play	clean	see
10	run	play	make	see	make	say	do
11	see	see	see	make	decide	do	say
12	decide	watch	let	ride	say	know	clean
13	leave	clean	know	say	see	turn	know
14	say	leave	say	decide	ride	find	watch
15	clean	dance	clean	run	do	sit	find
16	eat	jump	watch	turn	find	make	straighten
17	let	turn	ride	dry	watch	climb	make
18	turn	ride	decide	let	know	watch	ride
19	dry	let	leave	leave	climb	play	wash
20	do	dry	do	watch	clean	decide	give
21	know	say	open	know	let	dance	open
22	watch	know	climb	eat	dance	let	let
23	find	eat	find	swim	sit	dry	climb
24	ride	wash	lay	give	swim	eat	guess
25	dance	find	jump	climb	eat	open	run

Core lexicon checklists developed by *frequency* criterion for *Good Dog, Carl* (adjectives)

	20s	30s	40s	50s	60s	70s	80s
1	good	little	little	little	little	good	little
2	little	good	good	good	good	little	good
3	back	clean	hungry	big	clean	big	big
4	hungry	back	back	hungry	big	next	next
5	big	hungry	big	sure	dry	dirty	happy
6	messy	big	clean	messy	hungry	open	dirty
7	open	open	dry	open	open	nice	nice
8	sure	great	messy	next	happy	hungry	great
9	own	sure	great	fun	great	first	open
10	left	nice	sure	dirty	next	old	old
11	dirty	happy	dirty	right	dirty	sure	messy
12	happy	ready	happy	left	left	wonderful	smart
13	nice	messy	nice	ready	nice	happy	sure
14	huge	dirty	fun	smart	old	great	right
15	next	tired	old	own	sure	same	ready
16	right	left	next	great	first	messy	wonderful
17	able	next	ready	happy	messy	right	left
18	hot	smart	right	pretty	pretty	pretty	small
19	dangerous	first	first	nice	smart	cute	wet
20	first	right	safe	whole	soft	tired	able
21	great	whole	whole	wonderful	tired	whole	whole
22	long	awesome	wonderful	close	able	close	close
23	ready	huge	bad	excited	close	smart	first
24	young	old	full	fine	full	innocent	pretty
25	early	pretty	gentle	first	whole	own	different

Core lexicon checklists developed by *frequency* criterion for *Good Dog, Carl* (adverbs)

	20s	30s	40s	50s	60s	70s	80s
1	then	then	then	then	then	then	then
2	back	back	back	back	back	back	back
3	there	all	there	there	there	there	there
4	just	there	up	up	all	all	all
5	all	up	all	all	up	just	up
6	where	upstairs	just	just	just	now	just
7	upstairs	now	now	now	now	out	now
8	up	away	upstairs	upstairs	out	up	out
9	out	where	out	out	upstairs	again	where
10	down	out	very	where	where	upstairs	on
11	away	just	where	on	very	where	down
12	next	so	away	here	in	over	again
13	very	next	down	in	so	very	here
14	in	on	in	so	down	off	very
15	now	down	on	away	probably	here	upstairs
16	again	off	around	down	over	on	in
17	also	very	here	next	shortly	in	so
18	around	in	over	shortly	off	shortly	apparent
19	so	shortly	off	very	again	so	off
20	shortly	sure	next	again	away	down	over
21	on	again	again	how	on	next	how
22	more	over	right	off	around	away	shortly
23	how	really	apparently	yet	also	yet	around
24	once	around	shortly	over	here	how	really
25	as	soon	together	sure	soon	apparently	away

Core lexicon checklists developed by *frequency* criterion for *Good Dog, Carl* (function words)

	Age-invariant
1	a
2	and
3	be
4	for
5	have
6	he
7	her
8	him
9	his
10	I
11	in
12	into
13	it
14	look
15	of
16	on
17	she
18	so
19	some
20	that
21	the
22	they
23	to
24	up
25	with

Core lexicon checklists developed by *frequency* criterion for *Picnic* (nouns)

	20s	30s	40s	50s	60s	70s	80s
1	mouse	mouse	mouse	mouse	mouse	mouse	mouse
2	family	picnic	picnic	picnic	picnic	picnic	picnic
3	picnic	family	truck	truck	truck	truck	truck
4	truck	truck	family	family	family	road	road
5	baby	road	road	road	road	baby	baby
6	road	baby	baby	baby	baby	family	family
7	back	back	back	back	time	time	flower
8	time	child	time	kid	flower	flower	toy
9	child	time	berry	child	back	doll	time
10	animal	girl	flower	grandpa	mom	back	back
11	kid	kid	rat	mom	doll	toy	mother
12	berry	berry	child	flower	kid	berry	food
13	flower	flower	animal	raspberry	berry	child	basket
14	girl	animal	rock	time	dad	kid	picture
15	mom	doll	food	animal	toy	basket	thing
16	rest	raspberry	blanket	berry	grandpa	water	baseball
17	grass	grass	bush	toy	child	grandpa	water
18	day	food	doll	dad	raspberry	bush	berry
19	rock	baseball	kid	doll	food	tree	rock
20	raspberry	rock	day	blanket	brother	thing	place
21	dad	water	lake	grass	water	rock	watermelon
22	food	toy	grass	food	baseball	rest	doll
23	baseball	lunch	toy	grandma	bush	place	home
24	way	mom	lunch	day	blanket	middle	banjo
25	lake	bush	area	way	area	girl	child

Core lexicon checklists developed by *frequency* criterion for *Picnic* (verbs)

	20s	30s	40s	50s	60s	70s	80s
1	go	go	go	go	go	go	go
2	get	get	look	look	look	look	have
3	have	see	get	get	have	have	look
4	look	have	have	have	get	get	get
5	start	find	play	play	play	play	play
6	eat	look	eat	eat	find	eat	eat
7	find	eat	find	see	eat	seem	come
8	play	start	start	find	start	find	see
9	see	realize	see	start	see	sit	find
10	decide	decide	realize	come	sit	come	sit
11	come	begin	come	sit	come	start	know
12	call	come	sit	call	do	take	take
13	know	run	know	do	take	pick	start
14	notice	hear	run	decide	know	know	pick
15	pick	know	call	pick	decide	do	cry
16	do	fall	cry	realize	cry	cry	decide
17	begin	take	do	know	pick	decide	think
18	drive	do	take	take	run	lay	do
19	cry	pick	drive	run	fall	run	guess
20	run	continue	fall	cry	realize	call	hug
21	take	sit	decide	drive	drive	realize	lay
22	hear	give	pick	think	lay	fall	fall
23	hug	hit	lay	notice	call	think	jump
24	fall	forget	begin	hear	swim	swim	swim
25	sit	hug	notice	continue	jump	hear	put

Core lexicon checklists developed by *frequency* criterion for *Picnic* (adjectives)

	20s	30s	40s	50s	60s	70s	80s
1	little	little	little	little	little	little	little
2	stuffed	stuffed	stuffed	stuffed	happy	good	lost
3	happy	missing	missing	happy	good	happy	big
4	missing	happy	red	missing	lost	big	good
5	lost	pink	pink	big	pink	lost	happy
6	red	sad	happy	pink	big	missing	ready
7	sad	good	lost	good	missing	pink	red
8	pink	big	good	sad	stuffed	red	missing
9	good	lost	big	lost	red	stuffed	pink
10	big	hungry	sad	hungry	sad	nice	poor
11	hungry	ready	hungry	ready	hungry	sad	sad
12	left	bumpy	small	whole	whole	ready	old
13	bumpy	whole	left	full	great	old	bumpy
14	ready	great	ready	bumpy	ready	poor	great
15	excited	left	old	left	poor	great	nice
16	small	excited	beautiful	beautiful	beautiful	hungry	wonderful
17	scared	scared	scared	wonderful	nice	bumpy	beautiful
18	old	old	nice	poor	old	whole	whole
19	same	own	whole	old	young	left	hungry
20	beautiful	young	young	great	bumpy	full	stuffed
21	own	small	great	small	left	young	glad
22	whole	beautiful	excite	nice	full	beautiful	pretty
23	glad	high	bumpy	tall	tall	small	next
24	long	nearby	poor	lonely	wonderful	wonderful	full
25	nice	nice	full	scared	aware	glad	small

Core lexicon checklists developed by *frequency* criterion for *Picnic* (adverbs)

	20s	30s	40s	50s	60s	70s	80s
1	all	back	all	all	all	all	there
2	back	all	back	back	there	there	all
3	there	there	there	there	back	back	then
4	then	then	then	then	just	out	back
5	just	out	just	where	so	then	out
6	meanwhile	where	where	out	then	now	just
7	out	up	out	meanwhile	out	where	where
8	where	meanwhile	very	just	very	up	still
9	very	just	up	so	where	so	so
10	still	so	still	very	up	still	up
11	so	still	so	up	around	very	here
12	up	around	around	around	still	just	now
13	around	very	here	still	meanwhile	around	around
14	finally	now	now	now	maybe	here	very
15	together	together	together	here	now	meanwhile	on
16	alone	here	again	together	here	again	meanwhile
17	now	finally	finally	finally	together	maybe	down
18	really	behind	alone	maybe	finally	suddenly	even
19	off	alone	behind	behind	even	off	maybe
20	maybe	down	off	down	down	down	off
21	again	again	suddenly	really	really	meantime	again
22	behind	once	away	even	off	finally	apparently
23	even	even	down	again	again	even	along
24	here	really	on	off	on	together	away
25	away	on	probably	alone	probably	on	ever

Core lexicon checklists developed by *frequency* criterion for *Picnic* (function words)

	Age-invariant
1	a
2	all
3	and
4	be
5	for
6	he
7	her
8	him
9	his
10	in
11	it
12	look
13	of
14	on
15	one
16	she
17	so
18	some
19	that
20	the
21	their
22	them
23	they
24	to
25	with

Core lexicon checklists developed by *percentage* criterion for *Good Dog, Carl* (nouns)

	20s	30s	40s	50s	60s	70s	80s
1	laundry	bed	bed	bed	bed	baby	back
2	baby	Carl	dog	dog	Carl	Carl	bread
3	bed	baby	Carl	Carl	laundry	bed	dog
4	Carl	dog	baby	laundry	dog	dog	Carl
5	dog	laundry	laundry	baby	baby	laundry	laundry
6	crib	crib	grape	chute	back	back	baby
7	grape	grape	crib	grape	chute	grape	bed
8	bread	cookie	back	cookie	grape	bread	grape
9	mess	butter	chute	milk	bread	crib	butter
10	milk	bread	cookie	bread	milk	window	window
11	butter	mess	milk	mess	butter	mess	mother
12	room	milk	mess	butter	crib	chute	chute
13	chute	room	bread	back	cookie	milk	crib
14	cookie	chocolate	butter	crib	floor	butter	milk
15	back	back	chocolate	window	mess	cookie	powder
16	bath	chute	window	room	window	floor	floor
17	music	window	room	chocolate	basement	powder	cookie
18	window	bath	soap	mother	kitchen	chocolate	head
19	chocolate	refrigerator	time	music	soap	kitchen	fish
20	soap	time	kitchen	basement	chocolate	jar	jar
21	mom	soap	refrigerator	bath	powder	mother	syrup
22	mother	syrup	house	syrup	refrigerator	room	chocolate
23	fishtank	house	music	kitchen	syrup	syrup	room
24	kitchen	mom	syrup	time	time	music	kitchen
25	stair	kitchen	basement	fish	aquarium	head	mess
26	syrup	stair	bath	powder	music	puff	basement
27	basement	floor	floor	floor	room	aquarium	puff
28	house	play	stair	refrigerator	mother	dresser	soap
29	time	basement	fishtank	aquarium	dresser	refrigerator	thing
30	play	mother	mom	jar	bath	soap	water
31		fishtank	powder	soap	stair	basement	time
32		bedroom	jewelry	house	bedroom	bedroom	bedroom

33	music	bedroom	stair	thing	thing	music
34			mom	jar	time	loaf
35			ride	puff	stair	bath
36			water	water	water	top
37			thing	house		

Core lexicon checklists developed by *percentage* criterion for *Good Dog, Carl* (verbs)

	20s	30s	40s	50s	60s	70s	80s
1	get	clean	go	go	go	go	go
2	clean	make	get	get	look	put	put
3	go	get	put	put	take	look	look
4	take	go	look	look	have	take	take
5	put	put	clean	clean	put	come	come
6	look	run	have	take	come	get	get
7	make	look	take	come	dry	clean	have
8	come	see	make	have	clean	see	say
9	see	come	see	make	get	have	see
10	run	have	come	run	run	dry	run
11	leave	leave	run	say	make	say	open
12	say	take	leave	turn	see	run	clean
13	dry	dry	say	dry	say	make	do
14	have	decide	turn	play	climb	open	make
15	decide	say	watch	leave	open	turn	dry
16	eat	watch	decide		decide	climb	know
17	play	play	climb		turn	find	turn
18	jump	turn	jump		find	leave	climb
19	turn	push					
20	watch						

Core lexicon checklists developed by *percentage* criterion for *Good Dog, Carl* (adjectives)

	20s	30s	40s	50s	60s	70s	80s
1	good	good	good	good	good	good	good
2	little	back	little	little	back	back	little
3	back	little	hungry	back	little	little	back
4		hungry	back				

Core lexicon checklists developed by *percentage* criterion for *Good Dog, Carl* (adverbs)

	20s	30s	40s	50s	60s	70s	80s
1	then	back	up	up	back	back	up
2	up	up	then	back	out	up	then
3	out	then	back	out	up	then	out
4	down	out	down	then	then	out	back
5	upstairs	over	upstairs	down	down	over	down
6	just	upstairs	all	on	over	on	on
7	in	down	over	over	upstairs	off	there
8	on	away	on	upstairs	off	down	off
9	so	on	in	off	on	all	over
10	off	all	off	all	all	there	all
11	over	off	just	in	there	so	in
12	all			shortly	in	upstairs	so
13				there	so	in	upstairs
14					just		just
15					shortly		

Core lexicon checklists developed by *percentage* criterion for *Good Dog, Carl* (function words)

	Age-invariant
1	and
2	the
3	in
4	on
5	and
6	be
7	to
8	they
9	of
10	he
11	with
12	up
13	into
14	some
15	for
16	she
17	down
18	so
19	out
20	him
21	at
22	I
23	after
24	not
25	all
26	by
27	over

Core lexicon checklists developed by *percentage* criterion for *Picnic* (nouns)

	20s	30s	40s	50s	60s	70s	80s
1	picnic	picnic	picnic	picnic	picnic	picnic	picnic
2	truck	truck	truck	truck	truck	truck	truck
3	mouse	family	road	family	family	road	mouse
4	family	mouse	mouse	mouse	mouse	mouse	road
5	road	road	family	road	road	family	time
6	time	time	back	back	time	flower	family
7	baseball	baseball	rock	baseball	flower	time	flower
8	flower	flower	time	time	baseball	picture	baseball
9	child	rock	flower	baby	baby	back	basket
10	play		baseball	flower	picture	basket	picture
11	back		bush	blanket	rock	rock	toy
12				child		bush	watermelon
13				grass		toy	food
14				rock		tree	back
15				basket			water
16				play			rock
17							baby

Core lexicon checklists developed by *percentage* criterion for *Picnic* (verbs)

	20s	30s	40s	50s	60s	70s	80s
1	go	look	get	get	go	go	go
2	eat	see	go	have	get	get	get
3	find	go	find	find	find	have	see
4	get	find	look	go	have	look	find
5	have	eat	start	look	see	see	look
6	see	realize	have	see	look	find	come
7	start	start	realize	eat	start	eat	eat
8	fall	have	see	start	fall	fall	fall
9	hear	fall	eat	fall	decide	come	know
10	realize	get	fall	realize	eat	start	start
11	decide	decide	come	decide	come	decide	pick
12	look	come	decide	do	realize	hear	decide
13	come	hear	hear	come	hear	know	
14	run	leave	run	hear	do	realize	
15		run	hit	run	pick	think	
16				hit		do	
17						hit	

Core lexicon checklists developed by *percentage* criterion for *Picnic* (adjectives)

	20s	30s	40s	50s	60s	70s	80s
1	little	little	little	little	little	little	little
2	happy	happy	happy	happy	happy	happy	big
3	sad	sad	ready	ready	good	ready	good
4			good			big	happy
5						good	ready

Core lexicon checklists developed by *percentage* criterion for *Picnic* (adverbs)

	20s	30s	40s	50s	60s	70s	80s
1	out	back	back	back	out	back	out
2	back	up	up	out	back	up	back
3	up	around	all	up	there	all	up
4	all	then	around	all	up	there	all
5	then	all	there	around	then	then	there
6	around	so	so	so	around	so	then
7	so	just	then	then	so	around	around
8	there	there	still	there	just	down	on
9	meanwhile	still	on	meanwhile	all	still	so
10	just	meanwhile	down	down	still	on	down
11	off		just	just	on	just	still
12	still		very	on	down	now	just
13				still	off	off	off
14							now

Core lexicon checklists developed by *percentage* criterion for *Picnic* (function words)

	Age-invariant
1	and
2	a
3	the
4	be
5	of
6	they
7	in
8	to
9	on
10	for
11	with
12	not
13	so
14	some
15	at
16	all
17	them
18	into
19	but
20	up
21	he
22	one
23	him
24	she
25	down
26	because
27	I