

Supplemental Material S1. Item set information.

**PART 1: ITEM SETS.**

**Notes:**

- Identifying information is redacted and replaced with X (each X represents a syllable)
- Numbers following items in Massed sets indicate treatment phase (Massed subset 1 or 2)

**CAS 001**

<b>DISTRIBUTED</b>	<b>MASSED</b>	<b>CONTROL</b>
I love cheeseburgers	I'm hungry (1)	Let's have breakfast
Exterminate	I know karate (1)	Tardis
I'm taking drum lessons	Can I have the iPad please? (1)	Let's do something else
Do you want to play Xbox?	What do you want to drink? (1)	Are you ready to go home?
Where is the bathroom?	XX is my sister (1)	Who is the Doctor?
Please don't do that	Thank you very much (2)	XXX is my friend
I play basketball	We have eight cats (2)	I like Target
XXX (last name)	Minecraft (2)	XX X (hometown)
Gingercat	My name is X (2)	Alfie is one of our dogs
Mrs. XX is my speech teacher	Time and Relative Dimension in Space (2)	Let's watch YouTube videos

**CAS 002**

<b>DISTRIBUTED</b>	<b>MASSED</b>	<b>CONTROL</b>
I want a cereal bar	breakfast (1)	I like chocolate milk
XXX is my speech teacher	My dad's name is XX (1)	X is my brother
XXX (friend's name)	When are we going? (1)	it's almost 6 o'clock
I like playdough	5 minutes later (1)	XXXX XXX Lane (street address)
I live in XXX	When is the movie? (1)	Where's the bathroom?
What time is it?	Minecraft (2)	Do you want to play?
memory	XX is my friend (2)	I'm sorry
Talk to you later	My name is XX XXX (2)	kitchen
Beauty and the Beast	Can you help me please? (2)	after 2 hours
What's your name?	Have a nice day (2)	Where are my shoes?

**CAS 003**

<b>DISTRIBUTED</b>	<b>MASSED</b>	<b>CONTROL</b>
My name is XXX	XX is my cousin (1)	X is my twin brother
Spiderman	Wolverine (1)	Captain America
Can you help me please?	Thank you (1)	I'm hungry
Batman	Excuse me (1)	Iron Man
Mrs. XX (SLP)	Charlie is our dog (1)	Paw Patrol
How are you today?	I wanna play outside (2)	Good morning mom
See you later	cereal (2)	I love you
pepperoni	strawberry milk (2)	chicken nuggets
breakfast	Mrs. X (teacher) (2)	Burger King
Where is the bathroom?	Who is that? (2)	What's for dinner?

### CAS 004

<b>DISTRIBUTED</b>	<b>MASSED</b>	<b>CONTROL</b>
My name is X	What's on TV? (1)	XX is my cousin
Spiderman	superhero (1)	Wolverine
Can you help me please?	I'm thirsty (1)	I wanna play outside
Polar Bear	Batmobile (1)	Paw Patrol
Mrs. XX (SLP)	Good morning dad (1)	Charlie is our dog
How are you today?	I love you (2)	Thank you
See you later	Mrs. S (2)	Excuse me
pepperoni	chocolate milk (2)	cheese-its
Where are my shoes?	cereal (2)	Burger King
Where is the bathroom?	X is my twin brother (2)	Who is that?

### CAS 005

<b>DISTRIBUTED</b>	<b>MASSED</b>	<b>CONTROL</b>
XX XX (name)	excuse me (1)	Pepper (dog)
thank you	yesterday (1)	hello
teacher	Mickey (1)	towel
doing	What's your name? (1)	tomorrow
Disney World	sister (1)	Phanatic
XX (friend)	XXX (sister) (2)	XX (friend)
please	XX (friend) (2)	see you later
hamburger	good morning (2)	guacamole
Where is the bathroom?	pizza (2)	How are you?
I'm tired	I'm hungry (2)	I'm thirsty

### CAS 008

<b>DISTRIBUTED</b>	<b>MASSED</b>	<b>CONTROL</b>
XX XXX (name)	lollipops (1)	XX is my cousin
Petey the fish	museum (1)	Tony Box Turtle
XX (friend)	See you later (1)	Train station
Miss XX (SLP)	I want my Teddy (1)	Stewart (character)
Amelia Bedelia	Let's go (1)	Sister X (family friend)
Excuse me	Oreo (2)	No thank you
Please stop	Uncle XX (2)	Juice
What's your name?	breakfast (2)	How are you?
Play-doh	Where's the bathroom? (2)	Yesterday
I'm hungry	Angry Birds (2)	Cat in the Hat

## PART 2: MATCHING INFORMATION.

Descriptive statistics for item set matching for length and baseline accuracy (SD for baseline accuracy based on averages of item scores, not based on set scores per probe). IPC = Index of Phonetic Complexity (Jakielski, 2002, 2017); IPC was calculated by treating each target as a single word. Within each child, there were no differences between any item sets ( $ps > .05$ ).

Participant	Set	# syllables (SD)	Baseline accuracy (SD)	IPC
001	Distributed	5.10 (1.85)	0.10 (0.11)	12.0 (4.2)
	Massed	5.20 (2.25)	0.11 (0.11)	10.4 (3.6)
	<i>Massed 1</i>	<i>5.40 (1.52)</i>	<i>0.10 (0.14)</i>	<i>10.0 (3.9)</i>
	<i>Massed 2</i>	<i>5.00 (3.00)</i>	<i>0.12 (0.08)</i>	<i>10.8 (3.6)</i>
	Control	5.00 (1.76)	0.15 (0.23)	11.4 (4.4)
002	Distributed	4.80 (1.75)	0.18 (0.21)	7.8 (4.2)
	Massed	4.70 (1.77)	0.27 (0.18)	10.1 (3.5)
	<i>Massed 1</i>	<i>4.60 (1.52)</i>	<i>0.27 (0.19)</i>	<i>8.6 (1.1)</i>
	<i>Massed 2</i>	<i>4.80 (2.17)</i>	<i>0.27 (0.19)</i>	<i>11.6 (4.5)</i>
	Control	4.70 (1.64)	0.22 (0.22)	10.9 (5.1)
003	Distributed	4.00 (1.33)	0.17 (0.24)	8.2 (3.8)
	Massed	3.80 (1.40)	0.15 (0.24)	9.0 (2.5)
	<i>Massed 1</i>	<i>3.80 (1.64)</i>	<i>0.10 (0.22)</i>	<i>8.4 (2.4)</i>
	<i>Massed 2</i>	<i>3.80 (1.30)</i>	<i>0.20 (0.27)</i>	<i>9.6 (2.7)</i>
	Control	3.90 (1.20)	0.10 (0.14)	7.9 (2.3)
004	Distributed	4.10 (0.74)	0.20 (0.20)	7.9 (2.9)
	Massed	3.60 (0.97)	0.17 (0.31)	8.1 (3.7)
	<i>Massed 1</i>	<i>3.60 (0.55)</i>	<i>0.20 (0.36)</i>	<i>7.2 (1.6)</i>
	<i>Massed 2</i>	<i>3.60 (1.34)</i>	<i>0.13 (0.30)</i>	<i>9.0 (5.1)</i>
	Control	3.60 (1.51)	0.10 (0.18)	8.7 (2.2)
005	Distributed	2.70 (1.16)	0.11 (0.23)	5.2 (2.7)
	Massed	2.70 (0.67)	0.11 (0.16)	5.4 (2.9)
	<i>Massed 1</i>	<i>2.60 (0.55)</i>	<i>0.06 (0.13)</i>	<i>5.4 (3.0)</i>
	<i>Massed 2</i>	<i>2.80 (0.84)</i>	<i>0.16 (0.36)</i>	<i>5.4 (3.1)</i>
	Control	2.70 (0.67)	0.12 (0.20)	3.7 (2.2)
008	Distributed	3.30 (1.34)	0.05 (0.12)	7.1 (2.3)
	Massed	3.30 (0.95)	0.08 (0.12)	6.6 (3.4)
	<i>Massed 1</i>	<i>3.40 (1.14)</i>	<i>0.10 (0.16)</i>	<i>5.0 (1.6)</i>
	<i>Massed 2</i>	<i>3.20 (0.84)</i>	<i>0.05 (0.07)</i>	<i>8.2 (4.2)</i>
	Control	3.30 (1.42)	0.07 (0.17)	6.5 (2.5)

## References

- Jakielski, K. J. (2002). *The index of phonetic complexity: Preliminary findings*. Paper presented at the Annual Child Phonology Conference, Wichita, KS.
- Jakielski, K. J. (2017). *Building speech and quantifying complexity. The manual*. Pittsburgh, PA: Childhood Apraxia of Speech Association of North America.