

**Supplemental Material S1.** Exploratory post hoc analyses to identify potential explanations for our failure to confirm our a priori hypotheses related to our primary research questions.

### **Associations With Autism Severity, Developmental Level, and Trials Retained**

We examined whether word/nonword amplitude differences at T3 and P3 were significantly associated with autism symptom severity, developmental level, and the number of trials retained for each participant. ADOS calibrated severity scores (Autism Diagnostic Observation Schedule Module I; Gotham, Pickles, & Lord, 2009) were not significantly correlated with the average word/nonword difference at T3 ( $r = -.15, p = .391$ ) or P3 ( $r = -.08, p = .645$ ). Mental age scores from the Mullen Scales of Early Learning (MSEL; Mullen, 1995; administered at Time 1 in the larger study) were also not significantly correlated with the average word/nonword difference at T3 ( $r = -.09, p = .593$ ) or P3 ( $r = -.1, p = .572$ ). The total number of trials retained for word and nonword conditions was also not significantly correlated with the average word/nonword difference at T3 ( $r = .17, p = .368$ ) or P3 ( $r = .23, p = .217$ ).

### **Exploratory Significance Tests of Between-Condition Differences at Other Electrode Sites**

In addition to the electrode sites reported in the main article, we calculated average amplitudes from 200–500 ms to word and nonword at right hemisphere temporal and parietal electrode sites (T4 and P4, respectively) as well as left and right frontal (F7 and F8) and occipital (O1 and O2) sites. The significance of between-condition differences in average amplitude was tested against zero using paired one-sided  $t$  tests, assuming a more negative average amplitude for word. Across electrode sites, none of the between-condition amplitude differences were significantly different from zero. Table S1 (p. 2) presents the results of these significance tests.

### **Exploratory Predictive Analyses**

Receptive vocabulary scores (taken from the MacArthur–Bates Communicative Development Inventories [MCDI]; Fenson et al., 2007) collected 4 months after the event-related potential (ERP) were available for a subset of 24 participants. To examine the predictive nomological validity of all four putative measures of word processing, we documented Pearson correlations between each measure and later scores of receptive vocabulary and tested the significance of those associations using one-tailed significance tests (assuming more negative amplitudes for word). Across the entire subset of participants, none of the putative word-processing measures significantly predicted receptive vocabulary 4 months after the ERP. Results are detailed in Table S2 (p. 3). However, as was the case in our original sample, not all participants were familiar with the word stimuli presented at the time of the ERP. The median number of word stimuli known at the time of ERP by participants in this subset was 7 ( $M = 6.58, SD = 3.47$ ). One participant in this subset knew 0 word stimuli and six participants knew 10 word stimuli. As such, we examined the extent to which each putative word-processing measure interacted with word stimuli knowledge to predict later receptive vocabulary. No significant interactions between putative word-processing measures and word stimuli knowledge in predicting later receptive vocabulary were detected. Results of these analyses are presented in Table S3 (p. 4).

### **References**

- Fenson, L., Bates, E., Dale, P. S., Marchman, V. A., Reznick, J. S., & Thal, D. J. (2007). *MacArthur–Bates Communicative Development Inventories*. Baltimore, MD: Brookes.
- Gotham, K., Pickles, A., & Lord, C. (2009). Standardizing ADOS scores for a measure of severity in autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *39*(5), 693–705.
- Mullen, E. M. (1995). *Mullen Scales of Early Learning* (pp. 58–64). Circle Pines, MN: AGS.

**Table S1.** Significance tests of between-condition differences at exploratory electrode sites.

<b>Electrode site</b>	<b>Mean difference (<math>\mu\text{V}</math>)</b>	<b><i>SD</i> (<math>\mu\text{V}</math>)</b>	<b><i>t</i></b>	<b><i>p</i></b>
Right temporal (T4)	-0.429	6.91	-0.362	.359
Right parietal (P4)	1.708	3.48	2.860	.996
Left frontal (F7)	0.501	6.14	0.476	.682
Right frontal (F8)	0.504	5.64	0.521	.697
Left occipital (O1)	-0.061	7.48	-0.048	.481
Right occipital (O2)	1.004	6.73	0.869	.804

*Note.* T4, P4, F7, F8, O1, and O2 refer to corresponding electrode placement within the 10–20 system.

**Table S2.** Associations between putative word processing measures and later receptive vocabulary.

<b>Variable</b>	<b><i>r</i></b>	<b><i>t</i></b>	<b><i>p</i></b>
T3 average amplitude to word	-.27	-1.372	.099
P3 average amplitude to word	-.14	-0.681	.251
T3 average word–nonword difference	-.20	-0.981	.168
P3 average word–nonword difference	-.06	-0.285	.389

*Note.* T3 = left temporal electrode cluster; P3 = left parietal electrode cluster.

**Table S3.** Predicting later receptive vocabulary with measures of word processing and number of word stimuli understood.

<b>Variable</b>	<b>Coefficient</b>	<b>SE</b>	<b><i>t</i></b>	<b><i>p</i></b>
<i>T3 average amplitude to word model</i>				
Intercept	-8.11	33.83	-0.240	.813
T3 Avg Amp	6.78	13.16	0.515	.612
Words Understood	24.72	4.53	5.45	.000***
T3 Avg Amp × Words Understood	-1.64	1.55	-1.05	.306
<i>P3 average amplitude to word model</i>				
Intercept	-25.74	32.37	-0.795	.436
P3 Avg Diff	21.26	13.55	1.569	.132
Words Understood	28.51	4.73	6.027	.000***
P3 Avg Amp × Words Understood	-1.98	1.81	-1.097	.286
<i>T3 average word–nonword difference model</i>				
Intercept	-26.75	35.61	-0.751	.461
T3 Avg Diff	-5.83	11.36	-0.513	.613
Words Understood	27.38	4.67	5.862	.000***
T3 Avg Diff × Words Understood	-0.302	1.40	-0.215	.832
<i>P3 average word–nonword difference model</i>				
Intercept	-19.24	34.03	-0.565	.578
P3 Avg Diff	7.41	10.92	0.678	.505
Words Understood	27.19	4.64	5.86	.000***
P3 Avg Diff × Words Understood	-0.72	1.48	-0.487	.631

*Note.* Avg Amp= average amplitude to word between 200 and 500 ms after stimulus onset; Avg Diff= average difference between word and nonword amplitudes between 200 and 500 ms after stimulus onset; T3 = left temporal electrode cluster; P3 = left parietal electrode cluster; Words Understood = number of word stimuli featured in the event-related potential (ERP) paradigm reportedly understood by the participant.

\* $p < .05$ . \*\*\* $p < .001$ .