

Supplemental Table S2. Studies added for meta-analysis.

Citation	Participants	Research Design	Outcome Summary
Early Efficacy			
Smith-Lock et al. (2013)	<p><i>N</i> = 24 SLI</p> <p>Ages: 4;6–5;6</p>	<p><i>Design:</i> Group design, with 19 children in experimental group and 15 children in business-as-usual control group. Change from T1 (preintervention) to T2 (immediate postintervention) analyzed and compared statistically for experimental and control; change on treated/untreated targets analyzed for experimental group only.</p> <p><i>Targets:</i> Possessive 's, past <i>-ed</i>, pronouns</p> <p><i>Recast condition:</i> Whole-class lesson followed by small-group session with SLP, classroom assistant, or teacher. Techniques included corrective recasts and explicit instruction. Varied morphosyntax targets selected on basis of individual performance at pretest.</p> <p><i>Comparison condition:</i> Children received their typical programming, targeting receptive language skills.</p> <p><i>Session length/frequency/duration:</i> 1 session/wk consisting of whole-class followed by small-group activities; together, these totaled one 60-min session/wk for 8 wks.</p> <p><i>Rate of recasts:</i> Not reported.</p>	<p>Outcome measures were the change from pretest to posttest on treated targets for experimental versus control group and treated versus untreated targets. Experimental group made more progress on identified structures ($p = .009$) for treated goals; no change for experimental group for untreated goals ($p = .679$). Experimental compared to control group: $d^* = 0.41$, 95% CI [-2.52, 3.34].</p>
Late Efficacy			
Fey et al. (1993)—Clinician-administered program	<p><i>N</i> = 30 SLI & LI</p> <p>Parent, $n = 10$</p> <p>Control, $n = 9$</p> <p>Clinician, $n = 11$</p> <p>Ages: 3;8–5;10</p>	<p><i>Design:</i> Group design, with random assignment to clinician-administered program and delayed-treatment control group. There was also a parent-administered program (see above).</p> <p><i>Targets:</i> Four targets selected as lexical exemplars of a grammatical structure not yet in use by the child (e.g., Two aux</p>	<p>Outcome measure was Development Sentence Score (DSS) from parent-child language samples. The treatment group had significantly higher DSS scores than the control group at posttest ($p = .0005$; $d^* = 0.83$, 95% CI [0.26, 1.40]).</p>

		<p>forms chosen to address auxiliary production).</p> <p><i>Recast condition:</i> The clinician used focused stimulation techniques, including recasts, to target a specific grammar treatment goal per week. There was a brief imitation protocol at the beginning of each individual session involving target goal and contrasting goal. Four goals were targeted with a cyclical approach.</p> <p><i>Comparison condition:</i> Delayed-treatment control group.</p> <p><i>Session length/frequency/duration:</i> 1-hr individual session and two 1-hr group sessions per wk for 14 wks.</p> <p><i>Rate of recasts:</i> 1.89/min in parent-child posttreatment language sample.</p>	
<p>Gallagher & Chiat (2009)</p>	<p><i>N</i> = 24 SLI <i>Ages:</i> 3;6–5;0</p>	<p><i>Design:</i> Group design, with 8 children in intensive treatment group, 8 children in consultative service provision group, and 8 children in no-treatment control group. Differences on standardized test performance compared across conditions.</p> <p><i>Targets:</i> Addressed varied goals including <i>-ed</i>, <i>s</i>, vocabulary.</p> <p><i>Recast condition:</i> Direct intervention with therapist; used a package treatment that included modeling, recasting, imitation.</p> <p><i>Comparison condition:</i> The consultative treatment group received intervention from nursery staff supported by speech-language therapist. The no-treatment control group received one parent appointment for advice and no other treatment.</p> <p><i>Session length/frequency/duration:</i> 1 session, 4 hrs/wk for 24 weeks (96 total hours) for intensive treatment group.</p>	<p>Outcome measures all consisted of standardized test results. For additional outcomes, including vocabulary and parent report measures, see the published paper.</p> <p>Grammar comprehension with Reynell found that intensive and consultative models showed better posttest performance than no treatment (both <i>ps</i> < .01; intensive group, <i>d</i>* = 1.62, 95% CI [-2.18, 5.43]).</p> <p>Expressive grammar measured with Renfrew Action Picture Test found nonsignificant differences between intensive and consultative groups, but both were superior to no treatment (<i>p</i> < .01; intensive group, <i>d</i>* = 1.19, 95% CI [-0.26, 2.65]).</p>

		<p><i>Rate of recasts:</i> Not reported.</p>	
Roberts & Kaiser (2012)	<p>SLI, $n = 34$ TD, $n = 28$</p> <p><i>Ages:</i> 2;0–3;6</p>	<p><i>Design:</i> Group design, with 16 SLI participants in experimental group, 18 SLI participants in business-as-usual control group, and 28 TD children in separate no-treatment control group. The TD group's performance was used to monitor rate of progress in experimental and control groups with SLI as compared to TD children not receiving intervention.</p> <p><i>Targets:</i> single-word vocabulary, early word combinations.</p> <p><i>Recast condition:</i> Parents were trained to implement enhanced milieu teaching (EMT) in workshops and home-based training with clinicians. Therapists introduced the skills, provided rationale, and showed video examples during the workshops. During home visits, skills were reviewed, therapists modeled using the EMT strategies, parents practiced the strategies, and therapists coached and provided feedback. Strategies included modeling and expansion of verbal and nonverbal communication.</p> <p><i>Comparison condition:</i> Business-as-usual control group.</p> <p><i>Session length/frequency/duration:</i> 4 workshops/1 hr each + 1-hr, 1×/wk home visit + 1-hr, 1×/wk clinic visit, for 28 total intervention sessions.</p> <p><i>Rate of recasts:</i> Not reported. Parent use of expansions is reported as a rate of use as compared to child utterances, not per minute. At T3 (posttreatment), parents in the EMT group responded to child utterances with expansions in 44% ($SD = 20\%$) of responses, whereas parents in the control group did so in 10% ($SD = 8\%$) of responses.</p>	<p>Additional outcomes related to vocabulary are reported in the published paper, as are outcomes related to parent use of target intervention strategies.</p> <p>Outcomes are reported for standardized and nonstandardized measures. Participants in the experimental group showed better performance on PLS-4 Total Score ($p = .03$, $d^* = 0.60$, 95% CI [-3.97, 5.17]) and PLS-4 Expressive Communication ($p = .04$; $d^* = 0.67$, 95% CI [-2.63, 3.98]) but nonsignificant differences on PLS-4 Auditory Comprehension ($p = .11$). Nonsignificant differences were also found for the MCDI and MLUm (MLUm, $d^* = 0.49$, 95% CI [0.35, 0.64]). Growth in MLUm approached significance ($p = .07$).</p>
Robertson &	$N = 22$ SLI	<p><i>Design:</i> Group design, with 11 participants in experimental group,</p>	Additional outcomes related to vocabulary,

<p>Ellis Weismer (1999)</p>	<p>Ages: 1;9–2;6</p>	<p>10 in no-treatment control group. The experimental group performance at T2 was compared to control group performance at T2 in regards to MLU, expressive vocabulary, sociability, and intelligibility.</p> <p><i>Targets:</i> MLU, vocabulary.</p> <p><i>Recast condition:</i> Experimental participants received a package treatment consisting of clinician-administered focused stimulation with recasts and expansions, with the addition of expatiations.</p> <p><i>Control condition:</i> No treatment.</p> <p><i>Session length/frequency/duration:</i> 75-min. sessions, 2×/wk for 12 wks.</p> <p><i>Rate of recasts:</i> Not reported</p>	<p>intelligibility, socialization and parent stress are reported in the published paper.</p> <p>Participants in the experimental group demonstrated a higher MLU than did participants in the control group ($p = .03$, $d^* = 0.90$, 95% CI [0.80, 1.01]).</p>
<p>Tyler et al. (2003)</p>	<p>$N = 47$ SLI and phonological impairment</p> <p>Ages: 3;0–5;11</p>	<p><i>Design:</i> Group design, with 9–11 participants in each of 4 experimental groups (phonology first; morphosyntax first; alternating phonology/morphosyntax addressed in consecutive sessions; and simultaneous phonology and morphosyntax treatment, with both addressed in each session). There were 7 participants in a no-treatment control group for T1–T2 only. Performance is analyzed at T1 (pretreatment), T2 (following the first 12-wk block), and T3 (immediate posttreatment).</p> <p><i>Targets:</i> Varied; included 3S, past <i>-ed</i>, copula <i>be</i>, past irregular, and possessive 's.</p> <p><i>Recast condition:</i> The package intervention was administered by a graduate SLP student and included auditory awareness, focused stimulation, and elicited production. Corrective recasts were</p>	<p>Additional outcomes related to phonology are presented in the published paper.</p> <p>At T2, participants in the morphosyntax first and alternating treatments groups demonstrated significantly more change on the Finite Morpheme Composite (FMC) as compared with participants in the control group (alternating, $p = .003$; morphosyntax first, $p = .037$). At this time point, for the morphosyntax first group as compared with the delayed treatment group, $d^* = 1.02$, 95% CI [-5.36, 7.41].</p> <p>At T3, there was no significant difference in</p>

		<p>utilized for target morphemes.</p> <p><i>Control condition:</i> No treatment group from T1–T2. Comparisons can also be made between each of the various experimental groups at different time points during intervention.</p> <p><i>Session length/frequency/duration:</i> One 30-min. individual + one 75-min small-group (1–3 children) session/wk for two 12-wk blocks (24 total weeks). Inclusion of focused stimulation and recasts in these sessions varied by group: Morphosyntax first participants received the package intervention for the first 12 wks, phonology first participants for the final 12 wks, alternating participants received the package morphosyntax intervention throughout at half the frequency, simultaneous participants received the approach throughout but in sessions also dedicated to phonology intervention.</p> <p><i>Rate of recasts:</i> Not reported.</p>	<p>gains between the morphosyntax first, phonology first, and simultaneous groups. The alternating strategy group showed superior gains as compared with the phonology first ($p = .0018$), morphosyntax first ($p = .026$), and simultaneous ($p = .02$) groups.</p>
<p>Tyler et al. (2011)</p>	<p>$N = 16$ expressive SLI and phonological impairment</p> <p>Ages: 3;10–5;2</p>	<p><i>Design:</i> Group design, with 8 participants in morphosyntax and speech sound intervention group, 8 participants in phonological awareness and speech sound treatment group. (Additional participants are described in the published paper; only those groups that included morphosyntax outcomes are discussed here.) Change in Finite Morpheme Composite (FMC) and MLU over time are analyzed, but group performance or gains on each are not directly compared.</p> <p><i>Targets:</i> Copula <i>be</i>, auxiliary <i>be</i>, past –ed, and 3S.</p> <p><i>Recast condition:</i> The package intervention was administered by a graduate SLP student and included auditory awareness, focused stimulation, and elicited production. Corrective recasts were utilized for target morphemes. Alternating sessions addressed</p>	<p>Additional outcomes related to phonology and phonological awareness are reported in the published paper. For further information, also see “Phonological Awareness Training” (2012) from What Works Clearinghouse.</p> <p>No significant Group \times Time differences were found in MLU or FMC. Performance on MLU and FMC at T3 or for gains from T1 to T3 are not directly compared across groups, but analysis from the What Works Clearinghouse confirms no difference between intervention and control groups.</p>

		<p>morphosyntax versus phonological goals.</p> <p><i>Comparison condition:</i> Phonological awareness and phonological production were treated simultaneously.</p> <p><i>Session length/frequency/duration:</i> 1-hr sessions 2×/wk every 2 wks for 6 wks, followed by a break, then another 6-wk session. Intervention weeks that did not include morphosyntax intervention included 2 sessions focused on phonology.</p> <p><i>Rate of recasts:</i> Not reported.</p>	
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