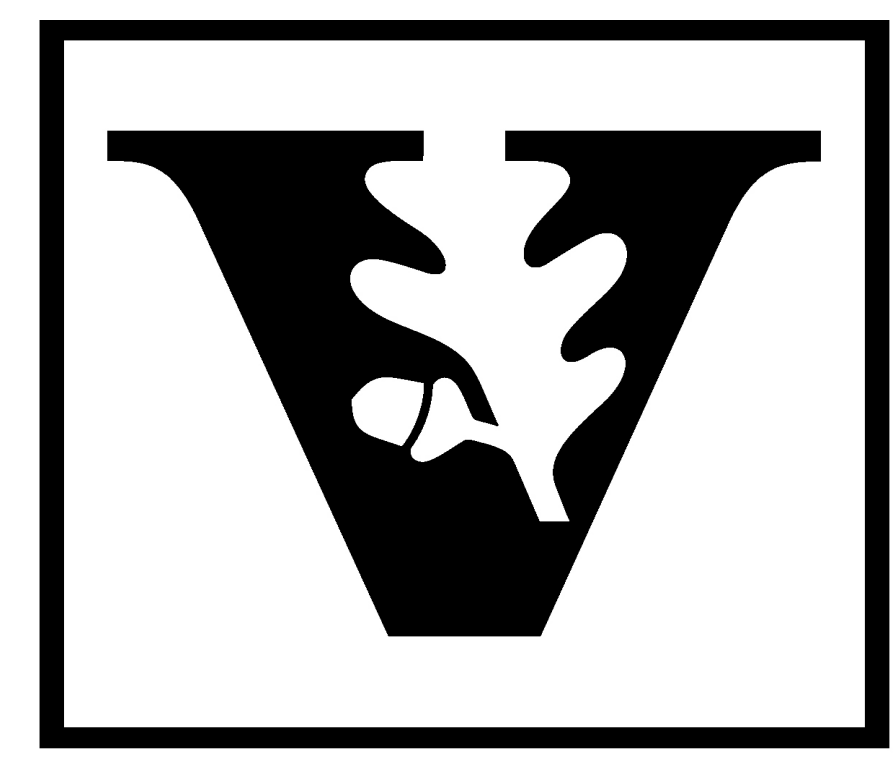


VANDERBILT
UNIVERSITY

Examining the Spontaneous Communication of Minimally Verbal Children with ASD in Supported versus Unsupported Contexts



VANDERBILT
UNIVERSITY

Elizabeth A. Fuller, Jodi K. Heidlage, Ann P. Kaiser, Connie Kasari
Vanderbilt University, Nashville, TN; University of California Los Angeles, Los Angeles, CA

Introduction

- Despite access to early intervention, up to 30% of children diagnosed with autism spectrum disorder (ASD) are classified as nonverbal or minimally verbal at age five (Anderson et al., 2007).
- The core deficits that are present in this minimally verbal population makes it difficult to get an accurate assessment of functional use of language.
- Context may have an important influence on the assessment of language in this population.
- Previous research has shown that context is a crucial factor in increasing child spontaneity and frequency of language for this population over the course of an intervention that focused on responsive interactions (Kasari et al., 2014).
- Understanding the differences in child behaviors across contexts that differ in terms of adults language could have implications for measuring communication abilities in a population with low-rates of communication.

Research Questions

- Are there differences in spontaneous communication by minimally verbal children with ASD in relatively supported and unsupported naturalistic language sampling contexts?
- Are there differences in imitated language in these contexts?

More Information

Elizabeth A. Fuller elizabeth.a.fuller@vanderbilt.edu
Jodi Heidlage jodi.k.heidlage@vanderbilt.edu

This work was supported in part by NIH Grant HD073975, and OSEP grant H325D010034

Methods

Participants

- 25 children with ASD who participated in an ongoing study comparing the effects of a naturalistic, play-based intervention to a discrete trial intervention (Kasari, Kaiser, Smith & Lord, in progress).
- Inclusion criteria:
 - Minimally verbal (less than 20 words)
 - Ages 5- 8 yrs
 - Score of above 20 months on a measure of nonverbal cognitive development
 - At least 2 years of prior intervention

	Mean (months)	SD (months)
Age	72	14.41
ADOS	20.13	3.43
IQ (Leiter)	59.42	15.78
PLS Total (Raw)	47.5	10.57

- Data were selected from pre-intervention measures during naturalistic language interactions in two contexts:
 - Supported context:** the adult modeled and expanded language related to the child's interest.
 - Unsupported context:** the adult spoke only in response to the child or when making general statements.

	Unsupported Context	Supported Context
Partner	Unfamiliar Adult	Unfamiliar Adult
Materials	Predetermined set of toys	Predetermined set of toys
Adult Responsiveness	Above 80%	Above 80%
Elicitations	3 per 10 minutes	1-3 per 10-minutes
Prompting	3 per 10-minutes	1-3 per 10-minutes
Adult Turns	63.4	80.44 t=4.51 p<0.001*
Language Models	General statements not related to the child's actions, not at target-level	Target-level language salient and relevant to the child's actions, at child target-level
Language Expansions	0%	Above 50%

Results

Total Child Language

- Including all unprompted, imitated, elicited, and prompted language.
- Rate of language per 10-minute sample.

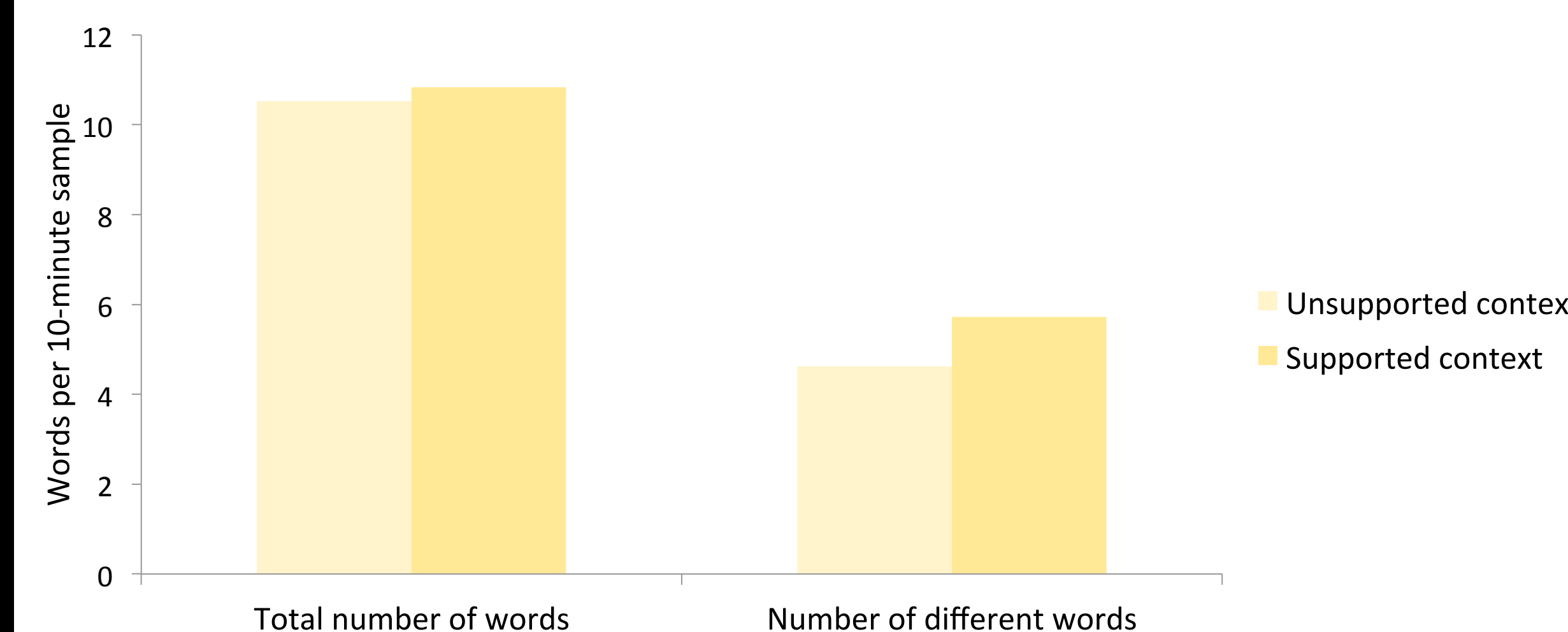
	Unsupported	Supported	t-test	p-value
Total utterances	8.1	14.24	2.652	0.013*

Spontaneous Unprompted Child Language

- Non-prompted, non-elicited, non-imitated language.
- Rate of language per 10-minute sample.

	Unsupported	Supported	t-test	p-value
Total number of unprompted words	10.52	10.84	0.206	0.837
Number of different unprompted words	4.62	5.72	1.457	0.158

Spontaneous Unprompted Language Across Contexts

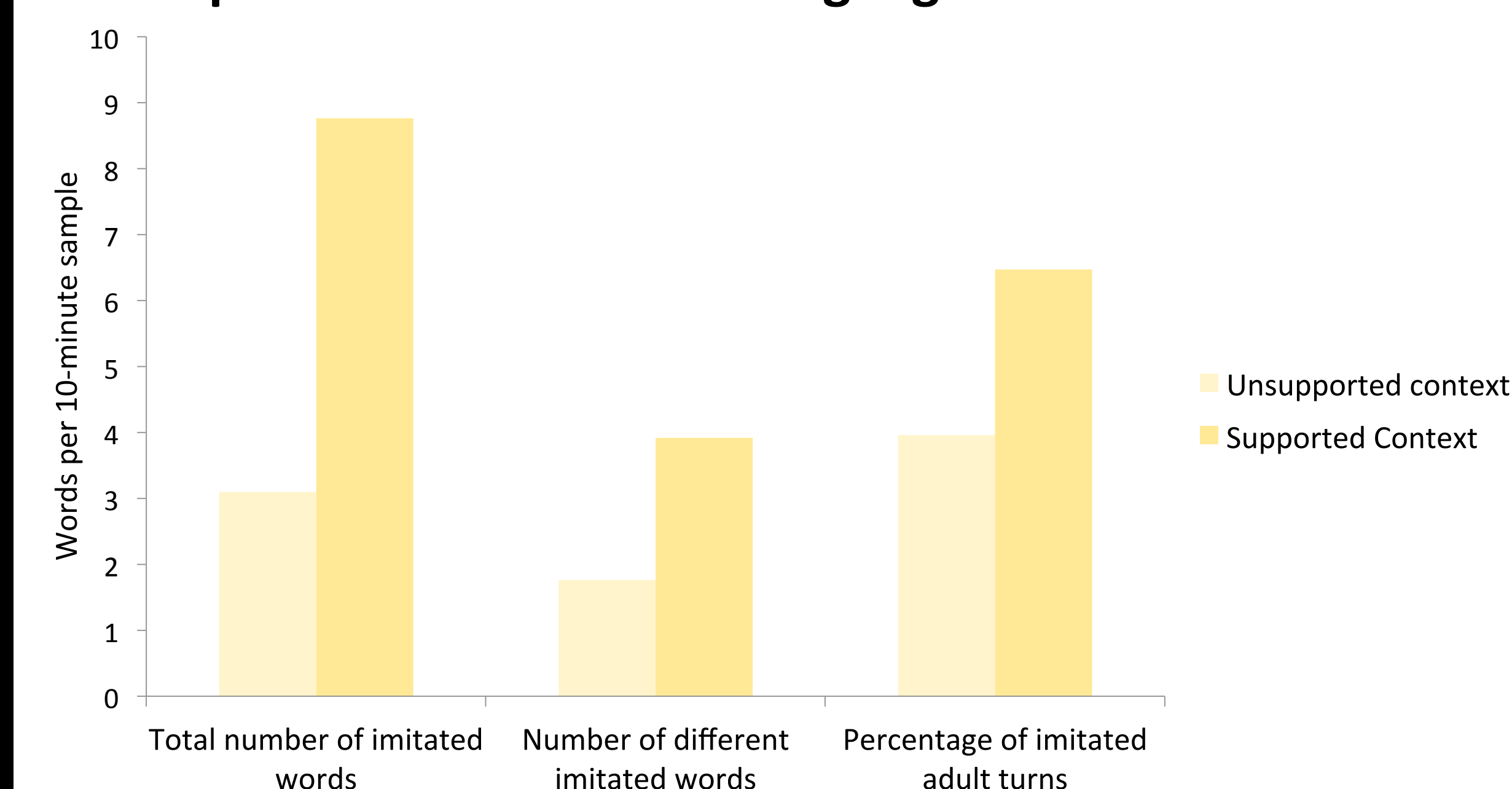


Spontaneous Imitated Child Language

- Any language imitated within 3 s following the adult utterance
- Rate of language per 10-minute sample.

	Unsupported	Supported	t-test	p-value
Total number of imitated words	3.1	8.76	2.82	0.0093*
Number of different imitated words	1.76	3.92	3.12	0.0046*
Percentage of imitated adult turns	3.96%	6.47%	2.37	0.0258*

Spontaneous Imitated Language Across Contexts



Discussion

- The amount of adult talk influences the frequency of overall child talkativeness and language imitations.
- Presumably, increasing the adult's language models and expansions increases the child's imitated language, both in quantity (total number of words) and in content (number of different words).
- These differences in adult talk do not change a child's quantity or content of spontaneous language.
- Thus, variations in the amount and content of adult talk appear to have limited effects on linguistic measures of child spontaneous language.
- It is important to quantify adult talk, including the quantity and content of language models and expansions to truly understand child language use in naturalistic language interactions.

Conclusions

- Although variations in adult talk may increase overall child communication, they do not immediately affect child use of spontaneous language.
- Understanding adult influences on child language use has important implications in measurement of language in naturalistic contexts.

References

- Anderson, D. K., Lord, C., Risi, S., DiLavore, P. S., Shulman, C., Thurm, A., Welch, K., Pickles, A. (2007). Patterns of growth in verbal abilities among children with autism spectrum disorder. *Journal of Consulting and Clinical Psychology, 75*, 594–604. doi:10.1037/0022-006X.75.4.594
- Kasari, C., Kaiser, A., Goods, K., Nietfeld, J., Mathy, P., Landa, R., & Almirall, D. (2014). Communication Interventions for Minimally Verbal Children With Autism: A Sequential Multiple Assignment Randomized Trial. *Journal of the American Academy of Child & Adolescent Psychiatry, 53*(6), 635-646.