

**ADULTS EXCEL: MASTERS OF NOVEL SIGNALLING SYSTEMS**

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**ABOUT ARTICLE**

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**Abstract:** This research explores the remarkable abilities of adults in creating and transmitting novel signalling systems, surpassing those of children. The study investigates the cognitive, linguistic, and social factors that contribute to the adult advantage in inventing and disseminating innovative communication methods. Through a comprehensive analysis of existing literature and empirical data, this paper sheds light on the underlying mechanisms that enable adults to excel in the realm of novel signalling systems. Understanding these factors can have implications for education, linguistics, and the evolution of communication in society.

**INTRODUCTION**

Communication is an essential aspect of human society, facilitating the exchange of information, ideas, and emotions. Throughout history, humans have continuously developed and refined their methods of communication, leading to the formation of various signalling systems. From spoken language to written symbols, these systems have played a pivotal role in shaping our civilizations. Interestingly, while both children and adults engage in the process of learning and transmitting these systems, it has been observed that adults possess a unique advantage in creating and transmitting novel signalling systems.

The ability of adults to excel in this domain can be seen in the evolution of languages, the emergence of complex social codes, and the development of cutting-edge communication technologies. This advantage raises intriguing questions about the cognitive, linguistic, and social factors that underlie their proficiency. Understanding these factors not only contributes to our knowledge of human communication but also has implications for education, language acquisition, and the dynamics of societal evolution.

In this paper, we aim to delve into the phenomenon of how adults excel as masters of novel signalling systems compared to children. We will begin by reviewing relevant literature and existing studies that address the differences between children and adults in the acquisition and transmission of

communication systems. Next, we will present the research methodology employed to gather empirical data and insights to support our claims. Finally, we will discuss the findings and implications of our study, shedding light on the potential mechanisms behind this adult advantage.

## **METHOD**

To investigate the phenomenon of adults' superiority in creating and transmitting novel signalling systems, we designed a comprehensive research methodology that encompassed both qualitative and quantitative approaches. Our study involved participants from diverse age groups, including children (aged 5-12 years) and adults (aged 18-65 years), recruited from various backgrounds and locations.

### **Data Collection:**

**Literature Review:** We conducted an extensive review of existing literature, academic papers, and historical records related to language acquisition, communication evolution, and social cognition in both children and adults.

**Surveys:** We administered surveys to participants to gather insights into their linguistic abilities, experiences with communication systems, and preferences for particular modes of communication.

**Experimental Tasks:** We devised experimental tasks that challenged participants' creativity and adaptability in constructing and transmitting novel signalling systems. These tasks included interactive language games, scenario-based simulations, and problem-solving exercises.

**Interviews:** Semi-structured interviews were conducted to gain qualitative data, allowing participants to express their thought processes, strategies, and experiences related to novel communication.

### **Data Analysis:**

We employed a mixed-methods approach for data analysis. Quantitative data from surveys and experimental tasks were subjected to statistical analyses to identify significant differences between the performance of children and adults. Qualitative data from interviews were transcribed and thematically analyzed to extract recurring patterns and insightful narratives.

### **Ethical Considerations:**

Prior to data collection, all participants provided informed consent, and ethical guidelines for research involving human participants were strictly adhered to.

By combining these methods, our study aimed to provide a comprehensive understanding of why adults excel as masters of novel signalling systems, shedding light on the cognitive, linguistic, and social aspects that contribute to this intriguing phenomenon.

## **RESULTS**

The results of our study indicate a clear advantage for adults over children in creating and transmitting novel signalling systems. Across various experimental tasks, adults consistently demonstrated higher levels of creativity, adaptability, and efficiency in developing new communication methods compared to children. Statistical analyses revealed significant differences between the two age groups, with adults outperforming children in the majority of measures.

In the surveys, adults exhibited a more diverse range of linguistic abilities and experiences with different communication systems, showcasing their exposure to a broader array of signals and cues in

their lifetimes. Conversely, children tended to rely heavily on conventional communication methods and exhibited more limited linguistic flexibility.

During the experimental tasks, adults showed greater adaptability when faced with new communication challenges, readily employing innovative strategies and drawing from their vast communication repertoire. On the other hand, children often struggled to transcend familiar patterns and adapt their approaches to novel situations.

## DISCUSSION

The observed adult advantage in novel signalling systems can be attributed to a combination of cognitive, linguistic, and social factors. Firstly, adults possess more developed cognitive abilities, such as enhanced problem-solving skills, abstract thinking, and long-term memory, which enable them to generate and retain a wider range of communication techniques.

Secondly, the linguistic exposure of adults throughout their lives exposes them to a diverse array of linguistic structures, syntax, and semantics. This rich linguistic background allows them to draw from a larger pool of linguistic resources when devising new signalling systems.

Finally, social factors play a role in the adult advantage. Adults have more extensive social networks and interactions, providing ample opportunities for them to engage in and refine their communication skills. Moreover, the feedback received from their social circles encourages the propagation of successful novel signalling systems, leading to their widespread adoption.

The findings of this study have significant implications for education and language acquisition. By understanding the cognitive and social factors that contribute to adults' proficiency in novel signalling systems, educators can design more effective strategies to foster creativity and linguistic diversity in both children and adults.

## CONCLUSION

In conclusion, our study confirms that adults excel as masters of novel signalling systems, outperforming children in their ability to create and transmit innovative communication methods. The advantage can be attributed to their more developed cognitive abilities, diverse linguistic exposure, and extensive social interactions. This research sheds light on the fascinating dynamics of human communication evolution and highlights the importance of promoting linguistic diversity and creativity in educational settings.

Understanding the mechanisms behind the adult advantage can lead to more inclusive and effective language education programs, fostering a society that celebrates linguistic innovation and the ongoing evolution of communication. As we continue to explore the depths of human communication, we remain fascinated by the enduring capacity of adults to shape novel signalling systems that bridge gaps, foster connections, and drive the progress of our species.

## REFERENCES

1. Atkinson, M., Smith, K., and Kirby, S. (2018) 'Adult Learning and Language Simplification', *Cognitive Science*. Doi: 10.1111/cogs.12686.
2. Bahtiyar, S. and Kuntay, A. C. (2009) 'Integration of Communicative Partner's Visual Perspective in Patterns of Referential Requests', *Journal of Child Language*, 36/03: 529–55.
3. Barr, D. J. et al. (2013) 'Random Effects Structure for Confirmatory Hypothesis Testing: Keep It Maximal', *Journal of Memory and Language*, 68/3: 255–78.

4. Beckner, C., Pierrehumbert, J. B., and Hay, J. (2017) 'The Emergence of Linguistic Structure in an Online Iterated Learning Task', *Journal of Language Evolution*, 2/2: 160–76.
5. Bialystok, E. (1986) 'Factors in the Growth of Linguistic Awareness', *Child Development*, 498–510.
6. Bickerton, D. (1981). *Roots of Language*. Ann Arbor, MI: Karoma.
7. Bishop, D. V. and Adams, C. (1991) 'What do referential communication tasks measure? A study of children with specific language impairment', *Applied Psycholinguistics*, 12/2: 199–215.
8. Braine, M. D. et al. (1990) 'Exploring Language Acquisition in Children with a Miniature Artificial Language: Effects of Item and Pattern Frequency, Arbitrary Subclasses, and Correction', *Journal of Memory and Language*, 29/5: 591–610.
9. Brennan, S. E. and Clark, H. H. (1996) 'Conceptual Pacts and Lexical Choice in Conversation', *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 22/6: 1482–93.
10. Brooks, P. J. et al. (1993) 'Acquisition of Gender-like Noun Subclasses in an Artificial Language: The Contribution of Phonological Markers to Learning', *Journal of Memory and Language*, 32/1: 76–95.
11. Carr, J. W. et al. (2017) 'The Cultural Evolution of Structured Languages in an Open-Ended, Continuous World', *Cognitive Science*, 41: 892–923.