

CHILDREN’S UNDERSTANDING OF THE MAXIM OF MANNER.

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Abstract: Understanding the Gricean Conversational Maxims provides a speaker with the ability to understand the pragmatic use of an utterance. The Maxim of Manner illustrates rules about how an utterance should be said rather than what is said. This study asks children between the ages of 4 and 8 to identify violations in the Maxim of Manner, specifically the submaxim 'Be orderly', aiming to identify at what age children show they understand the Maxim of Manner. Children were read three stories that either had violations in the order or did not, and they were asked to stop the reader when faced with a violation in the Maxim of Manner. Children provided reasonings for why they stopped the reader. If children were able to correctly identify changes in the order, they were deemed to have understood the Maxim. Results show that at the age of 8, children have an adult-like understanding of violations in the Maxim of Manner and can provide justifications for this. Suggesting that children begin to understand this Maxim later than the other Gricean Maxims.

Keywords: pragmatics, Gricean Conversational Maxims, Maxim of Manner, child language acquisition

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Children's understanding of the maxim of Manner

1. Introduction

Effective communication is a key aspect of discourse for speakers around the world. Grice (1975) proposed an account of how speakers can maximise the effectiveness of their conversations through the Cooperative Principle. This principle provides Conversational Maxims that must be adhered to for speakers to make the Conversational contributions required in the discourse. These maxims provide information into what is being said: Information that has to be informative (MAXIM OF QUANTITY), Information that has to be truthful (MAXIM OF QUALITY), Information that has to be relevant (MAXIM OF RELEVANCE), and Information into how something is said in the conversation (MAXIM OF MANNER). The Maxims are considered fundamental to conversation and are noticed as such. Each maxim has submaxims, which can be violated or flouted in conversation. Pragmatic awareness of these maxims provides speakers insight into interpreting other people's utterances and responding appropriately. This ability to understand the Maxims and identify violations is acquired during childhood. Studies suggest that sensitivity to Conversational Maxims begins in the early years of language acquisition. The MAXIM OF RELEVANCE is acquired at 3, the MAXIM OF QUALITY is acquired at 4, the MAXIM OF QUANTITY at age 5 and at age 6, the MAXIM OF MANNER. Results show that as early as age 6, children show an adult-like understanding of the MAXIM OF MANNER (Okanda et al., 2015). However, the MAXIM OF MANNER is yet to be studied independently without the other Maxims.

This study aims to fill the research gap surrounding children's understanding of the MAXIM OF MANNER, specifically the submaxim 'BE ORDERLY' - which has yet to be studied individually. The submaxim 'BE ORDERLY' is related to the order in which aspects of the conversation are presented to the hearer. Questioning when children become adult-like in this submaxim and hypothesising that results will show similar trends to previous studies: adult-like understanding will be at 6 years old. To investigate this, a book reading/listening call-out task is done on children between the ages of 4 and 8. In this task, children are read books with violations to the MAXIM OF MANNER and are asked to identify where the violation is in the book. If children can identify these violations, they are deemed to understand the maxim.

Thus, conducting research provides significant insight into child pragmatic language development. Knowing when children understand rules for how something is said in a conversation will provide parents, carers, teachers, and researchers with insight into working with children and their linguistic capabilities.

This paper further introduces the Gricean Conversational Maxims and previous literature in Section 2. Section 3 explains the methodology of the present study, and Section 4 depicts the results. Section 5 discusses the results, study, and future of this research, while Section 6 concludes the paper.

2. Literature Review

This review is organised into several sections. The first section looks at the theoretical foundations of Grice's Maxims. The second section presents key studies looking at the application and violation of these maxims in adults and children, and the concluding section discusses what this implies for the current study. This literature review seeks to highlight the importance of Grice's Maxims in facilitating effective communication and understanding, particularly the MAXIM OF MANNER in Children.

2.1 Grice's Maxims

A key principle in pragmatics is Conversational Implicatures. This is the degree to which sentence meaning determines what is said (Davis, 2024; Thomas, 1997), or in other words, what is meant by the speaker's utterance, which is not part of what is explicitly said. This is a type of indirect speech act (Nordquist, 2024). For example, when B asserts that they do not like parties in (1), it implies that B will not attend the party (Davis, 2024).

1) A: Are you going to the Party tonight ?

B: I don't like parties

(B is not going to the party tonight)

Paul Grice was the first to note this feature of language by formulating the Cooperative Principle: 'Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged' (Grice, 1975). This principle can be broadly defined as the speaker's meaning should be calculated based on the assumption that speakers behave rationally and cooperatively. (Portner, 2005). To be rational and cooperative, discourse participants will abide by Grice's

Conversational Maxims. Each maxim has its own set of submaxims to be aware of. These are as follows, with examples of when the maxim is violated (Grice, 1975).

- 2) **MAXIM OF QUANTITY** relates to the quality of information to be provided, and under it fall the following submaxims:
 - Make your contribution as informative as is required for the current purposes of the exchange.
 - Do not make your contribution more informative than is required.
 - a) “Pick up the red apple in the fruit bowl on the table in the kitchen.”
- 3) **MAXIM OF QUALITY** relates to trying to make your contribution one that is true, which holds two submaxims:
 - Do not say what you believe to be false.
 - a. “Dogs are not animals.”
 - Do not say that for which you lack adequate evidence.
 - b. “Dogs could be related to horses.”
- 4) The **MAXIM OF RELEVANCE** underpins the subject of the discourse, only having one submaxim:
 - Be Relevant
 - a. “What is your favourite colour?”
“I ate pasta yesterday.”
- 5) **MAXIM OF MANNER** unlike the other Maxims relates to HOW something is said rather than WHAT is said. Including various submaxims:
 - Avoid obscurity of expression.
 - a. “What was your day like the day after, the day before yesterday?”
 - Avoid Ambiguity.
 - b. “What did you do yesterday?”
“Yesterday was a day.”
 - Be brief and avoid unnecessary prolixity.
 - c. “What did you do yesterday?”
“Yesterday at midnight I was asleep, and I was also asleep at 1am and also 2am, all the way till 7am which is when I woke up and...”

- Be Orderly.
 - d. “What did you do yesterday?”
“I went to sleep at 7pm, but for lunch I had rice. In the morning, I met Jane, and I got woken up by a loud noise at 9pm...”

These Maxims are assumed by the discourse participants in an exchange and are not rules. In conversation, participants will function as if they abide by these maxims. Adherence to these maxims is adherence to the Cooperative Principle. When this adherence occurs, discourse participants depend on each other for information and have a tacit understanding of the key aspects of the conversation; this implies that the Conversational Maxims can be used universally in a rational conversation.

When violating and flouting the Maxims, ungrammatical speech does not always occur. A violation of a maxim is when someone breaks it in a way that makes people unaware that it is broken. One can violate the MAXIM OF QUALITY by lying or the MAXIM OF MANNER by actively using vague language or presenting information in a confusing sentence. Flouting a Maxim is when a Maxim has been broken in a way apparent to those in the discourse; this is often done as sarcasm (Lancaster University, 2019). This can happen in daily speech because when a Maxim is not respected, the hearer finds a way to make sense of what it said because discourse participants are cooperative. In (6), Speaker B flouted the MAXIM OF QUALITY and MANNER, and Speaker A would have had to rationalise B's response. Here, B is not responding in a way that is 'TRUTHFUL' or in a way that 'AVOIDS AMBIGUITY.' Speaker A would have to use this to provide a rational answer to Speaker B's irrational response - which may not be the correct answer. The current study focuses on violations in the MAXIM OF MANNER.

- 6) A: Where did you buy these apples ?
B: They magically appeared in my fruit basket

The Purpose of the Maxims is to provide discourse where information is effectively and efficiently exchanged, which is why understanding how people use and violate these Maxims is vital for understanding people's use of language. This theory is assumed to be a universal aspect of language, as participants should aim to be rational in all conversations. However, Stotts (2022) argues that whether participants are rational and equally want to achieve the set goals of the conversation is subject to social norms. This is because those in different social groups need information in a discourse due to the variation of their Linguistic needs. This idea

can directly translate into Adults' use of the Conversational Maxims versus Children's use of the Conversational Maxims.

2.2 Previous Research

There has been a range of studies on adults investigating adult-like understanding of the Conversational Maxims. A heavily studied maxim is the MAXIM OF QUANTITY. When looking into the MAXIM OF QUANTITY, there is varied research into which submaxim violation is not accepted by adults. In Davies and Katsos (2009), two experiments were completed in which participants rated the naturalness of instructions of varying levels of informativeness. In their first experiment, they ran a ratings study using a referential communication paradigm to study under and over-informativeness. In this experiment, participants watched a display in which one interlocutor asked the other to "Pass me the [referential expression]" and then rated how natural the instructions were using a magnitude estimation scale. Afterwards, they were asked if what they heard was something they themselves would have said. If a participant said that they would not have said this, it was interpreted as the violation being penalised. They found that under- and over-informative expressions were penalised. The second experiment investigated over-informativeness in production, finding that adults preferred the optimal response rather than producing an over-informative response. The results of both studies contrast that of Engelhardt et al (2006), who also studied these two submaxims of the MAXIM OF QUANTITY. Firstly, a study of production was conducted to determine the types of utterances participants generated. The second experiment asked participants to rate the acceptability of utterances, and the third experiment monitored participants' eye movement in response to the instructions presented. They found that over-informativeness is common in production, and under-informativeness is penalised when an instruction is received. In Davis and Katsos (2009) both are penalised when receiving an instruction and in production. Children act similarly to the results of Engelhardt et al (Sonnenschein, 1982). Sonnenschein studied the accuracy of responses of twenty kindergarten children (M=5.9) and 20 fourth-grade children (M=9.7) when exposed to either overinformed or underinformed instruction. A correct response was identified if the child could do the instruction. The older children made more correct responses than the younger ones. Younger children performed better with over-informative instructions than under-informative instructions - older children preferred under-informativeness. The second experiment assessed whether telling children to only focus on what is mentioned will cause older children to behave

in the same way as younger children; however, results were similar to those in experiment 1. In this study, children penalise violations in the MAXIM OF QUANTITY, both with under-informativeness and over-informativeness, but not at the same time. Older children and younger children do not penalise both. Younger children penalised under-informativeness like adults in Engelhardt et al.

Studying how children develop and understand the Maxims is just as important as studying how Adults react to Maxim violations. This is because conversations that adhere to the Maxims are clear and effective thus preventing misunderstandings within conversation, which is important when speaking to children. Although adults adhere to the Conversational Maxims, instances of flouting do occur (Syafryadin et al 2020). It is important to understand how children develop linguistically to become adult-like in this area.

Using a Truth Value Judgement test (TVJ), Panseri and Foppolo (2021) examined at what age these Conversational Maxims are recognised and whether there are differences between them. In this study, 163 Italian monolingual, typically developing children aged 3-9 were asked to evaluate how appropriate utterances were by a boy who answered questions from a puppet. This was done with gold, silver, and bronze medals. They found that all items in which the MAXIM OF QUANTITY or RELEVANCE were violated were significantly less accepted across all age groups. Adults provided gold medals for violations in the MAXIM OF MANNER, submaxim 'BE BRIEF' 30.6% of the time, and children even more, at 60% for preschoolers and 45% for primary school children. Preschoolers gave gold medals to violations in the MAXIM OF MANNER, submaxim 'BE ORDERLY' 67.8% of the time, Primary school children gave gold medals to these violations 51.7% of the time and adults 52.8% of the time. Whilst adults and children always sanction violations in the MAXIM OF QUANTITY and RELEVANCE, they are more tolerant of violations of the MAXIM OF MANNER. They state that these may have come about because violations of QUANTITY and RELEVANCE can lead to misunderstandings, whilst MANNER doesn't hinder comprehension as much. Eskritt et al. (2008) tested 3–5-year-olds to determine the age at which awareness of the MAXIM OF QUALITY, RELEVANCE and QUANTITY emerges. Children requested the help of two puppets, one of which would always adhere to the Maxims and one that always violated them. Consistently choosing the puppet that adhered to the Maxim was considered a show of understanding that Maxim. It was found that all children were sensitive to violations to the MAXIM OF RELEVANCE and generally did better in the QUANTITY condition than QUALITY. 3-year-olds never performed above chance in the QUANTITY condition, suggesting that this Maxim is particularly difficult for young children.

However, at 4 and 5 significant improvement is shown, indicating a turning point in understanding. This is consistent with previous studies (Conti & Camras, 1984; Akerman, 1981). Conti and Camras studied 48 children between the ages of 3 and 9 to determine whether there was a significant difference in children's development of the MAXIM OF QUALITY, RELEVANCE and QUANTITY. Children were told stories with different endings: one ending violated the Conversational Maxims and the other did not. Results show that 6-9-year-olds were aware of the violations, whilst younger children were not. Children's overall performance differed across age groups, but there appeared to be no differences between the Maxims. Akerman studied whether children aged 5-8 can identify and explain violations in the MAXIM OF RELEVANCE and QUANTITY. Children were read short stories containing the utterances and had to identify and explain a violation. The results of the experiment showed that 6- and 7-year-olds are sensitive to violations. However, 6-year-olds have trouble generating explanations for these violations. Children 8- and 9-year-olds do understand the violations and are able to explain them, being able to generate correct explanations 73% of the time. Cheng et al (2024) also studied the development of the awareness of the Maxims in Chinese children aged 4-12. Violations in the Maxims were shown to children through comics, and they were asked questions about these stories. Despite stating that these results may be unique to Chinese, the study yielded results that were equivalent to previous studies in different languages (English and Japanese). For the younger children, there was a significant difference between their scores in the MAXIM OF MANNER and QUALITY as well as the MAXIM OF QUANTITY and RELEVANCE. Performance increased with age.

Okanda et al. (2015) used a Revised Conversational Violation (CVT-R/CVT) test to show that sensitivity to the Maxims increases with age. The CVT contains question-answer conversations with two alternative answers to one question as shown in (7). Specifically, children are presented with a video or tape where three puppets are having short question-answer conversations. In the revised version, intonation is considered so that the puppets sound monotone and do not indicate the correct answer. One puppet asks the questions, and the other two answer. One answers adhering to one of the Maxims, whilst the other violates the Maxims. Children are made to decide which one of the puppets provides an inappropriate answer. In (7) children who understand the MAXIM OF MANNER, submaxim 'AVOID AMBIGUITY' will pick the first answer.

7) Question: Which do you like, milk or tea

- Answer: Maybe milk or maybe tea.

- The alternative, correct response would be milk.

Sixty-two typically developing Japanese-speaking children aged 4-6 were assessed using the CVT. Results found that the MAXIM OF RELEVANCE is the easiest Maxim to understand and that children showed sensitivity to the MAXIM OF MANNER by age 5. 6-year-olds and Adults correctly selected the violations for all the Maxims assessed, indicating that children demonstrate acquisition of adult-like awareness by the age of 6. The CVT has also yielded the same results in studies done on deaf and hearing children (Surian, 2010) and bilingual children (Siegal et al., 2010) however these studies did not look at the awareness of the MAXIM OF MANNER.

2.3 Timeline for Children

Considering these studies, the current study looks at children's understanding of the MAXIM OF MANNER, specifically the submaxim 'BE ORDERLY' (5d). The MAXIM OF MANNER is yet to be studied without the other Maxims. It is important to investigate the MAXIM OF MANNER because it is a vital part of Grice's Maxims – it is not only important to understand the development of what is being said but also how something is said. This maxim provides regularity in conversational behaviour regarding the way information is provided in a conversation. Studying children provides implications for understanding human communication and development. Previous Research provides and outline to the development stages of children with the Maxims (Figure 1). This study hopes to solely look at the development of the MAXIM OF MANNER.

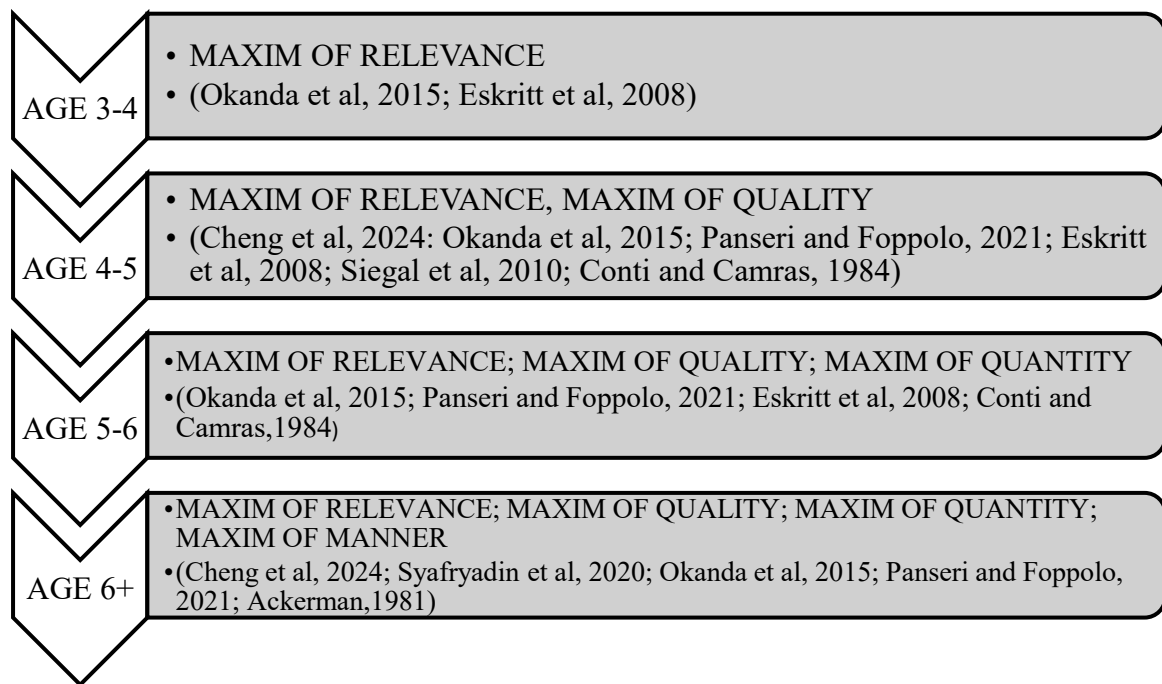


Figure 1: Timeline of children's acquisition of Grice's Maxims based on previous research.

2.4 Relevance and Aims of the Current Study

In research investigating children's understanding of the Maxims awareness often begins at the age of 6, additionally, finding that this is the case regarding the MAXIM OF MANNER (Okanda et al, 2015; Panseri and Foppolo, 2021; Cheng et al, 2024). Based on these results it is assumed that children begin to have an understanding in the MAXIM OF MANNER at the age of 6, in which awareness will increase with age. The aim of this study is to provide further research into when children understand the MAXIM OF MANNER. This will contribute to research into children's metapragmatic awareness and language acquisition. If Grice's Maxims are a fundamental aspect of conversation, more research into children's understanding of how something is said rather than what is said can provide insight into whether these maxims can provide a blueprint for conversations and how this blueprint is developed. The current study aims to answer "At what age do children develop an understanding of the MAXIM OF MANNER, submaxim BE ORDERLY" by testing children's ability to identify violations in a reading/listening book task. It is hypothesised that children will understand the MAXIM OF MANNER by the age of 6, as evidenced by previous studies.

3. Methodology

3.1 Participants

The child study consisted of 50 native English-speaking children between the ages of 4 and 8 (mean age: 6.6). Participants were volunteers that attended the Science Adventures event at Newcastle University. This is a free event organised by the School of Psychology to improve accessibility of science to Families in Newcastle. Parents/Carers were provided information on this study, in which they selected this study for their child to participate in.

The adult study consisted of 30 native English Newcastle University Undergraduates. Participants volunteered for this study.

3.2. Procedure

To investigate how children react to violations in the MAXIM OF MANNER, a between subjects' study was conducted. Groups were split evenly in the both the child and adult study. 25 children in the control study and 25 children in the test study. Likewise with the adult study - 15:15.

Participants were read 3 books and asked to stop the reader when they believed the book was out of order or 'silly'.

The books chosen for this experiment are published Children's stories to accurately mimic the types of stories children would encounter at different reading levels Each book states its ideal reading age. Those in the control set were read books without any changes in the order of pages, whilst those in the test set were read books with 3 changes at different points of the book. These are the studies' independent variables. Each book had 3 instances where the story had changed. A change in the book was established as a change in pages. If the story is originally page 1 2 3 4, the test story would be page 1 3 2 4.

The following stories were read with a sample from the Control and Test Books:

1/A: 'Miss Red Hen's Delicious Bread' (Appendix 1). Reading age 3-7 years old. This book is based on the story '[Little Red Hen](#)', which is not a story taught in schools as part of the curriculum. Participants would have purchased the book to have previously read it but can be found in children's bookstores and libraries.

8) 'Miss Red Hen's Delicious Bread'

Control:

Page 4: *Only Miss Red Hen works hard, she does all of the housework: sweeping, mopping, laundry, and gardening. One day, Mrs. Pigeon brought some grain for Miss Red Hen to thank her for always bringing nice flowers to her. "Thank you, Mrs. Pigeon," said Miss Red Hen as she thought about what she could do with all of this grain. If she made it into food right away, she wouldn't have much to share with everyone else.*

Page 5: *After thinking for a little while, Miss Red Hen finally realized that she could plant the seeds in the empty field next to her garden.*

Page 6: *She watered the field every day. Not long after, green little sprouts started growing.*

Test: In the test story page 5 and page 6 have been switched around.

Page 4: *Only Miss Red Hen works hard, she does all of the housework: sweeping, mopping, laundry, and gardening. One day, Mrs. Pigeon brought some grain for Miss Red Hen to thank her for always bringing nice flowers to her. "Thank you, Mrs. Pigeon," said Miss Red Hen as she thought about what she could do with all of this grain. If she made it into food right away, she wouldn't have much to share with everyone else.*

Page 5: *She watered the field every day. Not long after, green little sprouts started growing.*

Page 6: *After thinking for a little while, Miss Red Hen finally realized that she could plant the seeds in the empty field next to her garden.*

2/B: [‘Egg Fried Rice’](#) (Appendix 2) is a part of "[The Oxford Reading Tree: Read with Biff, Chip and Kipper](#)" books that are read in schools. This book is level 5 phonics, suitable for readers 5-8 years old. Although used in school curriculum, participants can purchase this book or find it in children's bookstores and libraries.

9) ‘Egg Fried Rice’

Control:

Page 5: *It was time to order "What do you like best?" said Dad, "I like egg fried rice," said Wilma, "and I'll try tiger prawns."*

Page 6: *Then all the lights went out. Oh no! There was a fire. "The kitchen is on fire," said Mr Lee. They had to go outside.*

Page 7: *Firefighters came to put the fire out. "I am sorry," said Mr Lee "We must close for the night."*

Test: In the test story page 5 and page 6 have been switched.

Page 5: *Then all the lights went out. Oh no! There was a fire. "The kitchen is on fire." said Mr Lee. They had to go outside.*

Page 6: *It was time to order "What do you like best?" said Dad, "I like egg fried rice," said Wilma, "and I'll try tiger prawns."*

Page 7: *Firefighters came to put the fire out. "I am sorry," said Mr Lee "We must close for the night."*

3/C: '[Little Miss Helpful and the Greenhouse](#)' (Appendix 3) is a Sunday Mirror limited-edition book, in line with the "[Little Miss and Mr Men](#)" book franchise. This book can also be purchased for readers 4-7 years.

10) 'Little Miss Helpful and the Greenhouse'

Control:

Page 8: *Little Miss Helpful started to paint.*

Page 9: *She painted all the walls. She painted all the doors. She painted the chimney and the roof! She even painted all the windows. The windowpanes as well as the frames.*

Page 10: *When she finished painting the house she still had some paint left over. So, she painted the garage as well. Outside and inside.*

Test: In the test story page 5 and page 6 have been switched.

Page 8: *She painted all the walls. She painted all the doors. She painted the chimney and the roof! She even painted all the windows. The windowpanes as well as the frames.*

Page 9: *Little Miss Helpful started to paint.*

Page 10: *When she finished painting the house she still had some paint left over. So, she painted the garage as well. Outside and inside.*

For this task children indicated that the book was out of order by actively stopping the reader by saying "Stop!" or writing on the page. The dependant variables in the study were whether those in the test set could point out that the story is out of order, and whether those in the control set did not stop the reader because the story is not out of order. Pages were laminated and

cleaned for the next participant and answers were noted on their individual response sheet. Children were also asked beforehand whether they had read the stories before to determine if answers were based on understanding or memory. These books also had pictures relevant to what was happening on the page so that children who were not at the reading level could understand what was happening in the book.

For the Pilot study, research assistants that were trained on the aims of study and how to conduct the study. To eliminate order bias, researchers were told to create a 123/ABC sequence of the stories to vary the order in which stories were read to the participants. This was used in all studies.

After the initial pilot study of 10 children, participants, both adult and child were subsequently asked to justify their answers.

The adult study was conducted in the same way as the child study. Participants were read the stories and had to indicate whether they found the story out of order. All participants' justifications were noted as well as notes about their behaviour during the study and whether they had read the books before.

4. Results

Although 50 child participants partook in this study, for the results 3 participants were excluded. This was to remove cases where a parent or sibling in the room helped them with their answers or where it was overtly clear that the child did not understand the experiment instructions, for example, taking the book and colouring every page without reading or listening to the story. Due to this the results account for 25 children in the control set and 22 children in the test set.

Despite children not being asked for their judgments in the pilot study the results include the findings from both studies as one since most judgements did not come up multiple times between children and thus can be considered individual differences. Even when the judgements were not relevant to the order of the story, all times in which the participant stopped the reader are included in these results.

It is important to note that in the adult study all participants read the 3 books, whilst in the child study this was not always the case. Only instances where the books have been read are considered for the results. In the child study, 'Miss Red Hen's Delicious Bread' was read 36

times, ‘Egg Fried Rice’ was read 35 times and ‘Little Miss Helpful and the Greenhouse’ was read 38 times (Table 1).

Book	Instances read	Instances read (%)
Miss Red Hens Delicious Bread	36/47	76.6
Egg Fried Rice	35/47	74.5
Little Miss Helpful and the Greenhouse	38/47	80.9

Table 1: Table showing how often each book was read (%)

‘Miss Red Hen’s Delicious Bread’ was *not* read 7 times in the control set and 4 times in the test set. ‘Egg Fried Rice’ was *not* read 5 times in the control set and 7 times in the test set. ‘Little Miss Helpful and the Greenhouse’ was *not* read 5 times in the control set and 4 times in the test set.

[A Chi-Squared Test of Independence calculator](#) was used to calculate whether there was a significant difference between the results of each book and the overall accuracies of each book. To calculate whether there was a difference between the accuracy of each age group a [Significant Difference Calculator](#) was used. This calculator only provided binary results: There is a significant difference and There is not a significant difference. Input for this calculator was Number of Participants and the Percentage they received. This calculator, calculated significance at 95%.

4.1 Predicted results.

As there are no changes in the story, it is assumed that in the control set accuracy should be 100%. This is in the case that all participants acknowledge that there is nothing out of order in the stories provided (Table 2).

Age	4	5	6	7	8	Adult
Accuracy %	100	100	100	100	100	100

Table 2: Predicted accuracy of control study.

Previous Research (Section 2) provide comparable results in children's understanding of Grice's Conversational Maxims. Children aged 4-5 are considered to have little understanding of the MAXIM OF MANNER often acting at chance, for this reason it is predicted that this age group will also act at chance. Throughout research it is shown that 6-year-olds have a basic

understanding of violations in the MAXIM OF MANNER. Therefore, although not adult-like, it is predicted that 6-year-olds will act above chance, showing that they are beginning to have awareness of the MAXIM OF MANNER. As age increases, research finds that understanding and awareness increases. Akerman (1981) found that children above the age of 6 can identify and explain violations in Maxims, in an adult-like way. It is predicted that both 7-8-year-olds and Adults will have 100% accuracy in the test set (Table 3).

Age	4	5	6	7	8	Adult
Accuracy %	50	50	80	100	100	100

Table 3: Predicted accuracy test study.

In the results presented below children are grouped as ‘Younger’ – indicating 4- and 5-year-olds, ‘6-year-olds’ as those who are 6 years old and ‘Older’ for children 7- and 8-years-old. This is because research implies that children below the age of 6 will not have acquired the understanding of a violation in the MAXIM OF MANNER, for this reason we assume that although 4- and 5-year-olds will have differing degrees of understanding of the Maxims altogether, this should not impact their understanding of MANNER. Children ages 7-8 are grouped together because it is assumed that they will act similarly to adults - if at age 6 is where understanding arises. Those that are 6 are separate to indicate a baseline for the development of this maxim.

4.2 Control Results

For the control set, each book is looked at individually. Individual accuracy for these sets was calculated by:

$$((Book\ Pages - Pages\ marked\ incorrectly) \div Book\ Pages) \times 100.$$

To calculate overall accuracy for each age group, the Book pages were multiplied by all the participants in the group and the pages marked incorrectly were the sum of all individual incorrect pages.

4.2.1. Miss Red Hen’s Delicious Bread

‘Miss Red Hen’s Delicious Bread’ has a total of 17 pages. Table 4 shows how many participants were in each group and how many pages would have been read for the whole group. For example, 15 Adults read this story, therefore 255 pages were read (15 x 17).

Age Group	No. Participants	Pages Read
Younger (4-5)	6	102
6-year-olds	5	85
Older (7-8)	5	85
Adult	15	255

Table 4: ‘Miss Red Hen’s Delicious Bread’ Number of pages that the participants read.

Between the groups there was no significant difference between the accuracy of the groups for this book. Overall accuracy was 96.2%. Adults had an accuracy of 98.8%, Older Children and Younger Children had an accuracy of 94.1 and 6-year-olds had the lowest accuracy of 92.4% (Table 5).

Age Group	Pages Read	Incorrect Pages	Accuracy (%)
Younger Children (4-5)	102	6	94.1
6-year-olds	85	6	92.4
Older Children (7-8)	85	5	94.1
Adults	255	3	98.8
Overall	527	20	96.2

Table 5: ‘Miss Red Hen’s Delicious Bread’ Control Set Accuracy

4.2.2 Egg Fried Rice

‘Egg Fried Rice’ is a 10-page book, the number of participants and how many pages read for each group is presented in Table 6.

Age Group	No. Participants	Pages Read
Younger Children (4-5)	6	60
6-year-olds	5	60
Older Children (7-8)	5	60
Adult	15	150

Table 6: ‘Egg Fried Rice’ Number of pages that the participants read.

Overall accuracy for ‘Egg Fried Rice’ was 94.2%. Lowest Accuracy was 85% for the 6-year-olds and highest accuracy was 99.3% for the Adults. Younger Children had an accuracy of 93.3% and Older Children have an accuracy of 91.7% (Table 7). These results were not significantly different.

Age Group	Pages Read	Incorrect Pages	Accuracy (%)
Younger Children (4-5)	60	4	93.3
6-year-olds	60	9	85.0
Older Children (7-8)	60	5	91.6
Adults	150	1	99.3
Overall	330	19	94.2

Table 7: ‘Egg Fried Rice’ Control Set Accuracy

4.2.3 Little Miss Helpful and the Greenhouse

‘Little Miss Helpful and the Greenhouse’ is a 15-page book. Table 8 presents the number of participants for each group and how many pages were read as a group.

Age Group	No. Participants	Pages Read
Younger Children (4-5)	6	102
6-year-olds	5	85
Older Children (7-8)	5	85
Adult	15	255

Table 8: ‘Little Miss Helpful and the Greenhouse’ Number of pages that the participants read.

Adults were most accurate for this book at 99.6%. Older Children had an accuracy of 95.2%, 6-year-olds had an accuracy of 93.3% and Younger Children had an accuracy of 98.1%. These results are not significantly different. In ‘Little Miss Helpful and the Greenhouse’ overall accuracy was 97.3% (Table 9).

Age Group	Pages Read	Incorrect Pages	Accuracy (%)
Younger Children (4-5)	105	2	98.1
6-year-olds	75	5	93.3
Older Children (7-8)	105	5	95.2
Adults	225	1	99.6
Overall	510	14	97.3

Table 9: ‘Little Miss Helpful and the Greenhouse’ Control Set Accuracy

Between all the results in the control set, all groups did similarly (Figure 2). Results across the control set are not significantly different at $p < 0.05$ (p-value: 0.999370, X^2 Test Statistic: 0.324336).

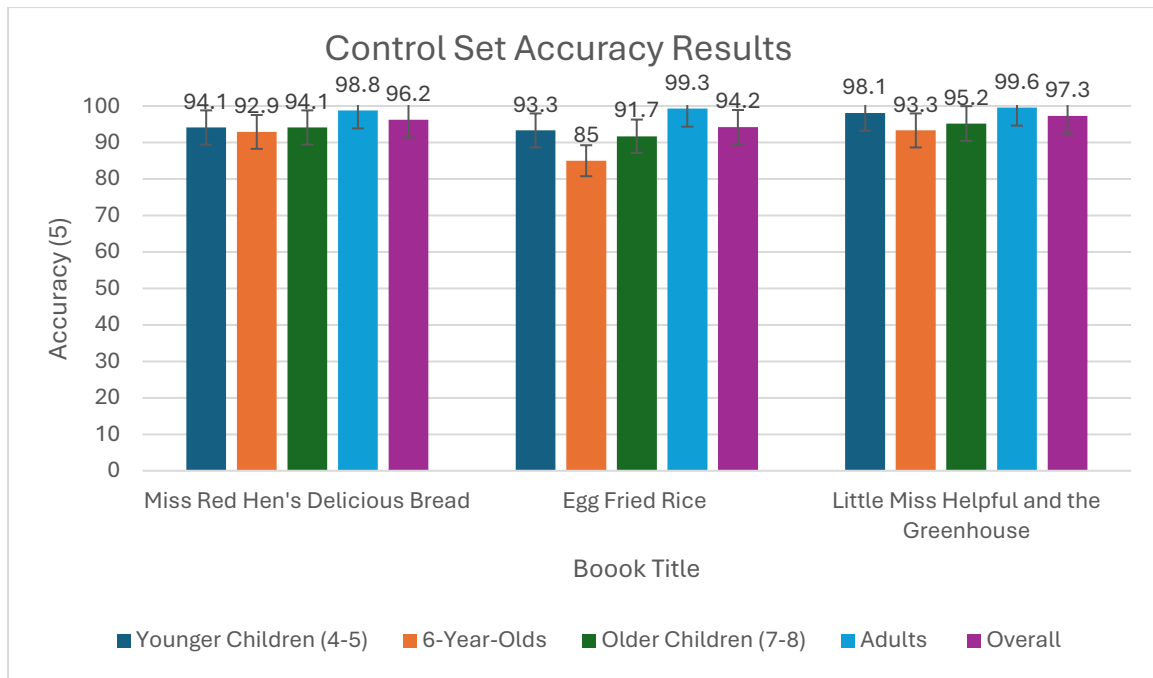


Figure 2: Graph showing the overall results for each age group within each book in the control set.

4.3 Test Results

Accuracy for the test set was calculated differently from the control set. For each book, a maximum of 3 points could be accurately identified as being out of order. Accuracy for each group was calculated with the maximum number of accurate points for each group i.e. 15 adults participated in the test group, therefore the maximum number of accurate points is 45 (15x3). Using this accuracy was calculated with the following:

$$((\text{Maximum Number of point outs} - \text{Number of Incorrect point outs}) / \text{Max}) \times 100$$

What was considered an incorrect point out was when participants either did not point out any of the pages that were out of order and when they pointed out a page that was not out of order.

4.3.1 'Miss Red Hen's Delicious Bread'

Table 10 shows the number of participants in each group and the maximum number of correct answers there could be for each group.

Age Group	No. Participants	Correct Point Outs
Younger Children (4-5)	4	12
6-year-olds	4	12
Older Children (7-8)	12	36
Adult	15	45

Table 10: ‘Miss Red Hen’s Delicious Bread’ number of participants and Maximum Number of correct points.

Overall accuracy for this book was 48.6%. Younger children and 6-year-olds had an accuracy of 8.3%, Older Children had an accuracy of 27.8% and Adults had an accuracy of 86.7% (Table 11). There is a significant difference between Adult Accuracy and all groups of children.

Age Group	Max Correct Points	Incorrect Points	Accuracy (%)
Younger Children (4-5)	12	11	8.3
6-year-olds	12	11	8.3
Older Children (7-8)	36	26	27.8
Adults	45	6	86.7
Overall	105	54	48.6

Table 11: ‘Miss Red Hen’s Delicious Bread’ Test Set Accuracy

4.3.2 ‘Egg Fried Rice’

Table 12 shows the number of participants in each group and the maximum number of correct answers there could be for each group.

Age Group	No. Participants	Correct Point Outs
Younger Children (4-5)	4	12
6-year-olds	3	9
Older Children (7-8)	10	30
Adult	15	45

Table 12: ‘Egg Fried Rice’ number of participants and the Maximum number of correct points.

Lowest accuracy for this book was with 6-year-olds who had a 0% accuracy. Younger Children had an accuracy of 50% and Older children had an accuracy of 36.7%. Adults were accurate 86.7% of the time. There is a significant difference between Adult accuracy and the accuracy of all the groups of children. Overall accuracy for this book is 58.3% (Table 13).

Age Group	Max Correct Points	Incorrect Points	Accuracy (%)
Younger Children (4-5)	12	6	50.0
6-year-olds	9	9	0.0
Older Children (7-8)	30	19	36.7
Adults	45	6	87.6
Overall	96	40	53.3

Table 13: ‘Egg Fried Rice’ Test Set Accuracy

4.3.3 ‘Little Miss Helpful and the Greenhouse’

Table 14 shows the number of participants in answers there could be for each group. each group and the maximum number of correct

Age Group	No. Participants	Correct Point Outs
Younger Children (4-5)	4	12
6-year-olds	4	12
Older Children (7-8)	12	36
Adult	15	45

Table 14: ‘Little Miss Helpful and the Greenhouse’ number of participants and the Maximum number of correct points.

Overall accuracy for this book is 44.8%. There s a significant difference between the accuracy of Adults (86.7%) and all other groups of children. Older Children had an accuracy of 11.1%, 6-year-olds had an accuracy of 8.3% and Younger children had an accuracy of 25% (Table 15).

Age Group	Max Correct Points	Incorrect Points	Accuracy (%)
Younger Children (4-5)	12	9	25.0
6-year-olds	12	11	8.3
Older Children (7-8)	36	32	11.1
Adults	45	6	86.7
Overall	105	58	44.8

Table 15: ‘Little Miss Helpful and the Greenhouse’ Test Set Accuracy

Results within each group across the 3 books are significantly different to each other at $p < 0.05$ (p-value: 0.000000, X^2 Test Statistic: 48.550525). However, the overall accuracy between the books is not significantly different. Figure 3 shows the results of the rest groups.

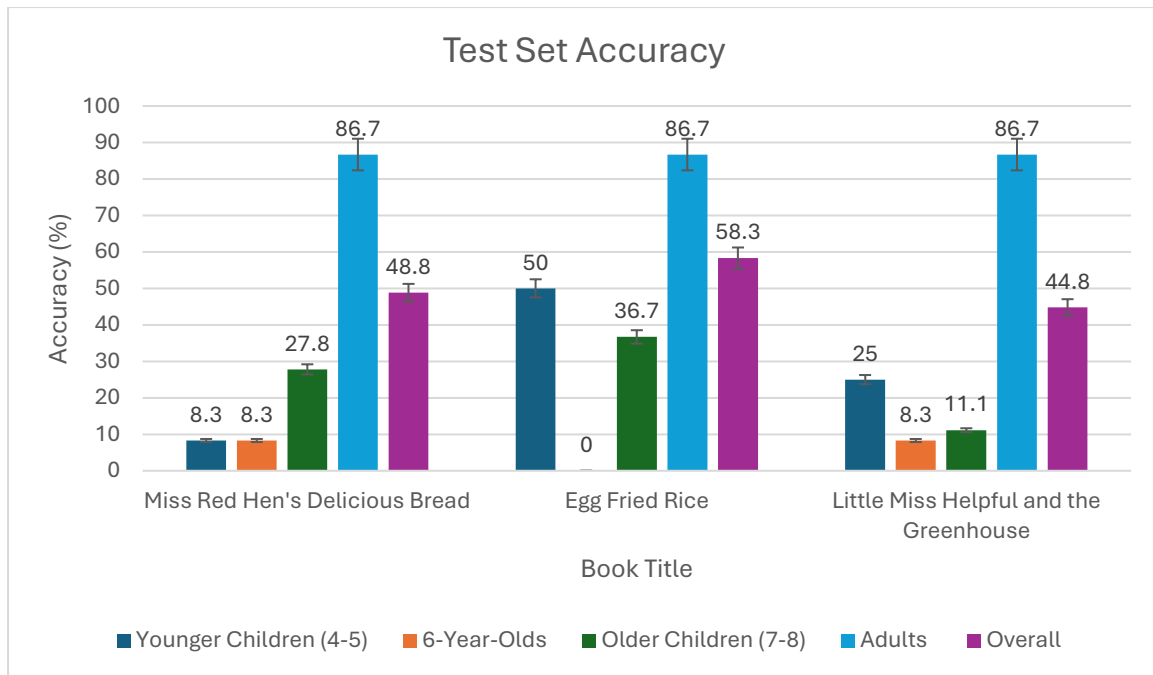


Figure 3: Graph showing the overall results for each age group within each book for the Test Set.

5. Discussion

5.1 Discussion of the Control Results

Results for the control set did not show any significant difference at $p < 0.05$ (p-value: 0.999370, X^2 Test Statistic: 0.324336). This is expected of the control set because there shouldn't have been any points in which the story was stopped. However, despite this, accuracy was not 100% for any of the stories or age groups.

'Miss Red Hen's Delicious Bread' was considered book A/1 for the experiment and had an overall accuracy of 96.2%. Out of 255 pages that were read to the 15 adults only 3 were pointed out as having an incorrect order, resulting in a 98.8% accuracy for Adult participants. Older Children (7-8-year-olds) pointed out 5 out of 85 pages resulting in an accuracy of 94.1%. Here all incorrect answers were from 8-year-olds. 7-year-olds got 100% accuracy in this book. This was unexpected but was justified by issues with all the animals speaking and living together. This justification was surprising because animals talking is common in various children's books. 6-year-olds had an accuracy of 92.9% with only 1 participant not getting 100% accuracy - identifying 6 out of 85 pages as incorrect. No justifications were provided for these pages. Within the Younger Children (4-5-year-olds), only 2 participants didn't get 100% resulting in only 6 pages out of the 102 being identified. One of the participants justified their answers by

stating that "It's wrong that Miss Red Hen didn't share with the other animals". This reasoning was not identified by any other child in the study and is not about the ordering of the story. The other participant provided no justification as they were a part of the pilot group. Accuracy for this age group was 94.1%.

In book B/2 'Egg Fried Rice' overall accuracy was 94.2%. For this book adults had an accuracy of 99.3%, only identifying 1 page out of the 150 incorrectly. Similar to 'Miss Red Hen's Delicious Bread' 7-year-olds had an 100% accuracy and 8-year-olds contributed to the 5 out of 60 pages incorrectly identified, without any justifications from the 8-year-olds. Overall, Older children had an accuracy of 91.7%. 6-year-olds had their lowest accuracy of 85% in this book as 9 out of 60 pages were identified. Here no participant could explain why they believed these pages were out of order but insisted that they were. Younger Children had an accuracy of 93.3% only identifying 4 out of 60 pages as incorrect. Children were unable to explain why these pages were pointed out.

Overall accuracy for book C/3 'Little Miss Helpful and the Greenhouse' was 97.3%. Adult accuracy was highest in this book with 99.6% as only 1 page out of 225 pages were identified as out of order. In 'Little Miss Helpful and the Greenhouse', Older children accuracy was 95.2% as only 5 pages were identified out of the 105. Children stated that they pointed these pages out because they weren't descriptive enough: "It doesn't explain where the bus stopped", "It doesn't say that she crossed at a traffic light". These descriptions of why pages were picked out was surprising because it wasn't expected that a children's book needed to have this level of description for parts not vital to the plot of the story. 6-year-olds could not justify picking out 5 pages of the 75 pages read to them but insisted that they were out of order. Accuracy for this group was 93.3%. Accuracy for the Younger Children was 98.1% - their highest accuracy across the books. In this book 2 out of 105 pages were brought to attention. One of the pages pointed out was justified with the idea that "She shouldn't be painting someone else's house", whilst the other page was pointed out because it flouts the MAXIM OF QUALITY by stating that Little Miss Helpful is not helpful. It wasn't expected that children made note of this, and many children did not because it wasn't relevant to what was being investigated (The MAXIM OF MANNER). Despite children not being expected to have identified this, it provides more information into children understanding the MAXIM OF QUALITY at age 5 as previously studied (Conti and Camras, 1984; Eskritt et al, 2008; Siegal et al, 2010; Okanda et al, 2025; Panseri and Foppolo, 2021; Cheng et al, 2024). Future studies solely looking at the MAXIM OF MANNER may want to avoid this overlap as it did affect results in this study.

In each book accuracy is high - but lower than predicted. Only 1 participant for each book in the adult control study pointed out a page incorrectly. This was unexpected because it was predicted that adults will always be able to identify that there is nothing out of place in the book. However, when looking at the justifications found for these decisions Adults became paranoid and doubted their decisions. Even after letting participants know that if they believed there was nothing out of place - that was fine. Participants were worried that they were doing the study incorrectly because they hadn't marked anything as incorrect during the previous books read so in turn pointed out pages because they "felt like they had to" or "just in case" without knowing that this was incorrect. This finding was unexpected but did provide insight into Adults acting in accordance with the Cooperative Principle: 'Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged'. Adults have been able to maintain and cooperate to the 'conversation' in a way that they believe was expected and required, even though what was expressed was incorrect. This did not occur with any other age group. One plausible hypothesis is that adults may be more inclined than children to employ repair strategies in response to conversational violations – however this beyond the frame of the current research.

It was predicted that all participants will have 100% accurately in the control set, acknowledging that as the books were being read that nothing was out of order. It was surprising overall that this was not the case - except from 7-year-olds in 'Miss Red Hen's Delicious Bread' and 'Egg Fried Rice' and but there is no significant difference between the accuracy of each age group for each book and there is no significant difference between how all groups did across the books as a whole - the overall accuracies for each book were not significantly different. Therefore, in the control set, all children behave adult-like, and no book was more difficult than the other.

5.2. Discussion of the Test results

In 'Miss Red Hen's Delicious Bread' overall accuracy was 48.6%. Adults answered correctly 86.7% of the time, with only 6 incorrect answers out of the possible 45. It was often the case that rather than identifying a page as out of order when it wasn't, Adults tended to not identify that anything was out of order at all. However, justifications for pages that were picked out were as expected and often described with "this event cannot happen before another event."

These results were unexpected as Adults were predicted to have a consistent 100% accuracy but had an accuracy below 90%. Older children had an accuracy of 27.7%. In the group 8/12 participants had 0% accuracy and did not find a that the books were out of order. This decreased overall accuracy in the group as the overall results found 26 incorrect answers out of the 36. Of those that did identify problems with the book one 8-year-old and one 7-year-old got 100%; one 8-year-old only marked one page correctly and the last 8-year-old marked the correct pages and an additional page. All judgements for the pages that were marked were consistent with expectations and how adults described their answers. There is a significant difference between how Older Children and Adult accuracy, however there is not a significant difference between Adult accuracy (86.7%) and only 8-year-old accuracy (58.3%), which may indicate that at the age of 8, children perform similarly to Adults. In this book 6-year-olds and Younger Children had an accuracy of 8.3%. In the 6-year-olds only 1 participant identified that parts of the story were not in order, however justifications for the pages were not about the order of the pages. This participant pointed pages out because "yeast is not a word" and "it shouldn't be I ate; It should be I did eat." Younger Children only consisted of 5-year-olds as no 4-year-old read this story in the test set. With the younger children only 1 page was accurately pointed out, all other pages pointed out were not out of order and could not explain why they had pointed these pages out. For both 6-year-olds and Younger Children 11 out of 12 incorrect answers were provided.

'Egg Fried Rice' had the highest overall accuracy across the books with 58.3%. Adults also had an 86.7% accuracy here (6/45 incorrect answers). Although most participants had an 100% accuracy in this book, there were instances where pages that should have been identified were not. This may be because the point in which the pages are out of order were at the very start of the book - participants may have been missed it because it was unexpected (Appendix 2). Justifications were often about how one page should be after another. Older children had their highest accuracy across the 3 books in 'Egg Fried Rice' with 36.7%. Amongst the group the only child that got 100% was the same 8-year-old that received 100% in 'Miss Red Hen's Delicious Bread', providing expected judgements for answers. Other children were able to identify some pages but not other pages, whilst three children found no faults in the story. Older Children provided 19 out of 30 incorrect answers. Similarly, although there is a significant difference between the accuracy of Older Children and Adults, there is no significant difference between the accuracy of 8-year-olds (83.3%) and Adults. Across all books 6-year-olds had the lowest accuracy in 'Egg Fried Rice' with a 0% accuracy. This was not expected but may be due to the small sample size (3 children), all children in this group believed that there was nothing

wrong with the book. Younger children had their highest accuracy in this book, working at chance (50%) which was expected, providing 6 out of 12 incorrect answers. Most children in the group found at least 1 problem with the book, with judgements relevant to the order of the book - "if there's a fire you can't order food." It is surprising that the Younger Children performed better than the Older Children and the 6-year-olds. The accuracy of Younger Children is not significantly different to the accuracy of Adults or the accuracy of Older Children.

Overall accuracy in 'Little Miss Helpful' was 44.8%. Again, Adults had an accuracy of 86.7% (6/45 incorrect answers). As portrayed in 'Miss Red Hen's Delicious Bread' and 'Egg Fried Rice,' Adults were often unable to identify points in which the pages were out of order – specifically the last point (Appendix 3). Older Children had their lowest accuracy of 11.1% with 32 out of 36 incorrect answers, this is because 7-year-olds got a 0% accuracy, finding that there was nothing out of order in this book. Amongst the 8-year-olds, there was 1 who got 100%. This participant also got 100% on the other books. Other 8-year-olds were able to identify some points in which the story was out of order but not all the points. There were also instances where pages that shouldn't have been marked were marked with no justification. Although, in 'Miss Red Hen's Delicious Bread' and 'Egg Fried Rice', the accuracy of 8-year-olds is not significantly different to the accuracy of Adults, in 'Little Miss Helpful and the Greenhouse' the accuracy of Adults and 8-year-olds (33.3%) is significantly different. In this book 8-year-olds do not appear adult-like. 6-year-olds had an accuracy of 8.3%, similar to their accuracy in 'Miss Red Hen's Delicious Bread'. In this group only 1 page was correctly identified, other pages were either not identified at all or incorrectly identified (11/12 incorrect answers). Participants couldn't explain why they believed the pages were out of order. Younger Children had an accuracy of 25%, which only included the results from 5-year-olds as no 4-year-old partook in this test. Only 4 pages were correctly identified, therefore providing 9 out of 12 incorrect answers. All pages that were identified were justified with "I don't know". Children were unsure why they believed the story was out of order but still picked out particular pages.

Across the results of each book, there is a significant difference which may indicate that each age group has a bias towards a particular book - except Adults who performed identically in each group. Older Children performed best in 'Egg Fried Rice', 6-year-olds performed best in 'Miss Red Hen's Delicious Bread' and 'Little Miss Helpful and the Greenhouse' and Younger

Children performed best in 'Egg Fried Rice'. Although, each group's accuracy across the books is significantly different, overall accuracy is not.

In the Test set it was found that in 'Miss Red Hen's Delicious Bread' pages that were a problem for both adults and children were different. Adults didn't have a consistent page that was not marked when it should have been, but children often failed to mark that the seeds in the book need to be planted before they grow (Appendix 1).

Common pages that were not identified in 'Egg Fried Rice' was the first instance of where there was a change in the order. This was the first two pages of the book which may have been difficult to initially identify because nothing else in the story has happened. It was assumed that participants would be able to identify that it cannot currently be time for the meal if the birthday is on Friday (Appendix 2).

The last point in which the story was out of order in 'Little Miss Helpful and the Greenhouse' was difficult to identify for all age groups. Many were not able to identify that the story was out of order here because Little Miss Helpful goes from talking about one thing to something else not particularly relevant to her previous statement (Appendix 3).

5.3. Overall discussion

Although participants performed worse than predicted it is understandable why accuracy wasn't as high.

Some children found that the stories were fundamentally 'silly', that animals shouldn't be talking, a fire wouldn't randomly break out in a restaurant, and someone wouldn't confuse a greenhouse and a green house. This was not taken into consideration for the present study when selecting the books to read because these were not only key aspects to the plot of the children's books used but also features that occur in other books that the children may have read in school. Additionally, if children don't know the process of planting and growing wheat or making bread as depicted in 'Miss Red Hen's Delicious Bread', identifying points where these were out of order would have been difficult to understand. The use of this book assumes that children 4-8 understand how wheat is grown and how Bread is made which may not be the case, particularly at a younger age.

As mentioned, 'Little Miss Helpful and the Greenhouse' flouts the MAXIM OF QUALITY, which wasn't investigated in this study but was present in the book. Some children caught onto

this, whilst many did not - understanding that it was part of the story. This was also not considered when picking a book for this study.

Most of all this experiment provided a cognitively challenging task for both children and adults. Participants would have had to read along, listen to the story, understand the story, stop the reader, and justify their answers. It is possible that children were not comfortable stopping someone they had just met from reading the story or missed a point in the story because they were listening but not thinking about catching what was out of order. Since this was done at an event where children were able to volunteer, there is also no information on whether children had any learning difficulties which may have affected results.

Accuracy would have been higher if Adults didn't become self-conscious when doing the control study. Marking something as out of order even when they didn't believe it was just to 'correctly' participate in the study brought down their accuracy. Additionally, accuracy for all children's groups would have been different if a point only counted if justifications were relevant to the order of the story. However, it was vital for these to be put in because it may show that children understand the MAXIM OF MANNER but do not yet have the Linguistic ability to verbalise it.

A future change to the study along with the those indicated above that affected results should be whether parents and siblings can be in the room with participants. In the current study, parents and siblings were allowed in the test room if they so wished to be. It was interesting to see that they were able to understand that something was or wasn't out of order and began to sway participants answers. Many siblings would tell the participant that they're wrong and make them change their answer, which is why these instances were not considered in the results. This would happen in both the pilot and the main child study.

After the pilot study, participants were asked provide judgements for their answers. What was also considered after the pilot was: which pages were considered correct. Initially, children's ability was underestimated, assuming that children would only notice that the story was out of order after the page had been read but many children noticed a change before the 'ideal' page. This meant that for each point there had to be a range of pages considered accurate.

Okanda et al (2015) found that 6-year-olds behaved adult-like when identifying violations in the MAXIM OF MANNER however this was not the case for the current study. In this study 8-year-olds performed adult-like in 2/3 instances, which may indicate that it is at 8 children begin to understand a violation in the MAXIM OF MANNER. A reason for this difference may be

because these studies look at different submaxims. Okanda et al looks at the submaxim 'AVOID AMBIGUITY', whilst this study and Panseri and Foppolo (2021), look at 'BE LOGICAL IN ORDER OF EXPRESSION/ BE ORDERLY'. It is possible that understanding of these submaxims is also affected by age. At 6 an understanding of a violation of the MAXIM OF MANNER and at 8 an understanding of a violation of the MAXIM OF MANNER is both possible depending on the submaxim studied. This is in line with Panseri and Foppolo (2021), as primary school children aged 6-9-years old started showing sensitivity to violations in the MAXIM OF MANNER for both submaxims studied (Section 2).

The result of the study provides an insight into children's understanding of pragmatics and looks at a Maxim that hasn't be examined often on its own. There is now more information about the developmental changes in the awareness of the MAXIM OF MANNER violations in typically developing English children aged 4-8-years-old.

The hypothesis "Children will have a basic understanding of the MAXIM OF MANNER, submaxim 'BE ORDERLY' at the age of 6" is rejected with reference to the results of this study. The present study finds that instead of at age 6 it is more likely that children will have a basic understanding of the MAXIM OF MANNER, submaxim 'BE ORDERLY' at the age of 8, as in this study 8-year-olds often behaved adult-like.

With this rejection of the hypothesis new research questions arise. If children begin to understand this submaxim at 8, when do they become fully adult-like? When do children acquire an understanding of the other submaxims 'AVOID OBSCURRITY OF EXPRESSION' and 'BE BREIF AND AVOID UNESCESSARY PROLIXITY.'

Understanding how children develop Grice's maxims can provide insights into having cooperative conversations with children, thus helping teachers, careers and researchers work with children. An understanding of the MAXIM OF MANNER may also help children with academic tasks such as appearance-reality distinction tasks which are often presented in school in the same ways book reading tasks are.

To further investigate how pragmatic ability matures in children, future research may consider a less cognitively demanding task or a task with novel books to avoid aspects that the children may pick out that are not relevant to the study. Investigations into children making these violations themselves will also provide steps towards understanding child language acquisition.

6. Conclusion

To conclude, Grice's Conversational Maxims provide a blueprint for effective and comparative communication. This study focused on the MAXIM OF MANNER, specifically the submaxim 'BE ORDERLY.' Aiming to understand how children behave when provided with a violation in this maxim. Children between the ages of 4 and 8 participated in this study to identify the age of understanding for this Maxim. Using a reading and call out task in this study it was found that contrary to previous research indicating that adult-like performance starts at 6-years-old, it may be instead at the age of 8, thus rejecting the research hypothesis. Children aged 8 preformed adult-like 66.7% of the time, which may indicate the start of understanding for this Maxim. Although there is a difference in results, this may be identified due to a difference in submaxims studied. This research may show that within the MAXIM OF MANNER, each submaxim has a different age of understanding, in which 'BE ORDERLY' may be at the age of 8. Future research into this topic should use a less cognitively demanding task; have greater control over extraneous variables and compare child understanding across the submaxims of the MAXIM OF MANNER. Overall, this study has provided an interesting look into how adults and children understand one of Grice's Maxims and filled the search gap for the limited research on the MAXIM OF MANNER.

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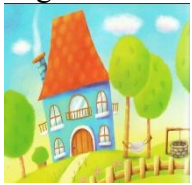
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Appendix

For all stories page 1 is the book title page.

(1) Miss Red Hen's Delicious Bread

a) Control Story

Page 2  This pretty blue house is the house of Miss Red Hen, Mr Pig, Miss Kitty and Miss Ducky who are all very different.	Page 3  Mr Pig likes to sit and eat all day.  Miss Kitty likes to walk around or do her makeup in front of a mirror,  and Miss Ducky likes to walk around and complain about everything, nothing could ever make her satisfied.	Page 4 Only Miss Red Hen works hard, she does all of the housework: sweeping, mopping, laundry, and gardening.  One day, Mrs. Pigeon brought some grain for Miss Red Hen to thank her for always bringing nice flowers to her. "Thank you, Mrs. Pigeon," said Miss Red Hen as she thought about what she could do with all of this grain. If she made it into food right away, she wouldn't have much to share with everyone else.
Page 5  After thinking for a little while, Miss Red Hen finally realized that she could plant the seeds in the empty field next to her garden.	Page 6  She watered the field every day. Not long after, green little sprouts started growing.	Page 7  Not long after that, the sprouts grew into a full field of wheat. So, Miss Red Hen invited Mr Pig, Miss Kitty and Miss Ducky to help her harvest all the wheat so she could make bread.
Page 8	Page 9	Page 10

 But Mr. Pig said “oh no... I just ate! If I go with you right now, then I will definitely get a stitch!” Miss Kitty said, “I just finished brushing my fur, if I go with you right now, it will definitely get all tangled up!”  Miss Ducky said, “I don’t really feel well today, I’m sorry Miss Red Hen, I don’t think I will be able to help you.” 	 So, Miss Red Hen had to collect the wheat all by herself, and when she finished, she had a huge cart of wheat. Then, she asked her friends to help her grind up the wheat to make flour.	Mr. Pig said “oh no... I’m so hungry, if I help you right now, I will definitely faint from hunger!”  Miss Kitty said, “I’ve just finished grooming my coat, if I help you right now then I’ll definitely get flour all over it!” Miss Ducky said “I have such a horrible stomach-ache, I’m sorry Miss Red Hen, I don’t think I will be able to help you” 
Page 11  Miss Red Hen then grounded the wheat all by herself, and when she got a huge bowl of flour, she mixed it with water, sugar, yeast, butter and milk. Then, she asked her friends to help her knead the dough.	Page 12  Mr. Pig said “oh no... I’m so sleepy, if I help you right now, I will definitely fall asleep right there!”  Miss Kitty said, “I also won’t be able to help you because it’s time for me to brush my fur again!”  Miss Ducky said “my eyes sting very badly, I’m sorry Miss Red Hen, I don’t think I will be able to help you”	Page 13  So, Miss Red Hen kneaded the dough all by herself, she shaped them into flowers, stars and hearts and then put them into the oven where the wonderful smell filled up the whole house.
Page 14	Page 15	Page 16

 “Mmm, what’s that smell? It smells so tasty!” said Mr Pig, Miss Kitty and Miss Ducky as they walked into the kitchen sniffing the air.	 “It’s the smell of bread” said Miss Red Hen, “but I don’t think I can share them with you, because when I invited you all to help me harvest the wheat, make the flour and knead the dough, nobody helped me at all. So, I will get to eat this bread all by myself!” And she pulled out the yummy-smelling bread from the oven.	 After that, Miss Red Hen sat and ate her bread happily meanwhile, Mr Pig, Miss Kitty and Miss Ducky sat jealously wanting to eat the bread too.
Page 17  Mr Pig, Miss Kitty and Miss Ducky then decided that they will gladly help Miss Red Hen whenever she asked them for help in the future.		

b) Test Story

Pages that participants could identify are highlighted.

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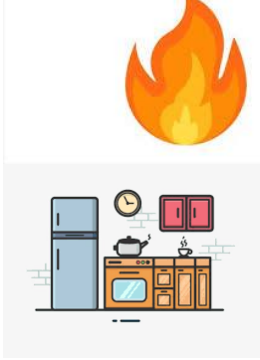
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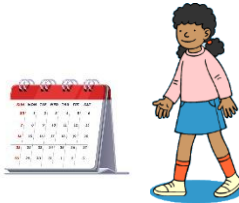
Page 17



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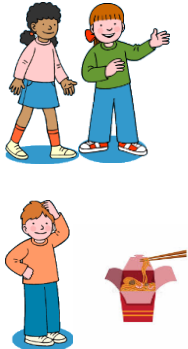
(2) Egg Fried Rice
a) Control Story

Page 2 "I will be nine on Friday" said Wilma "I'd like to eat out" "I'd like a Chinese meal" Wilma said, "and can we invite Biff and Chip?" "That's fine" said Mum. 	Page 3 It was time for the Chinese meal.  	Page 4 They went to the Bright Sky. "What's it like to be nine?" said Chip. Wilma smiled "It's alright," she said, 
Page 5 It was time to order "What do you like best?" said Dad, "I like egg fried rice," said Wilma, "and I'll try tiger prawns."   shutterstock.com - 2472023031	Page 6 Then all the lights went out. Oh no! There was a fire. "The kitchen is on fire." said Mr Lee. 	Page 7 They had to go outside. Firefighters came to put the fire out. "I am sorry," said Mr Lee "We must close for the night." 

Page 8 Wilma was so upset, she tried not to but she cried. "It is hard to see Wilma cry" said Mr Lee. "Come back on Sunday night" 	Page 9 On Sunday, Mr Lee put on a feast. "Smile," said Mr Lee. "This is so kind," said Mum. 	Page 10 "I had my egg fried rice and such a nice time," said Wilma. 
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b) Test Story

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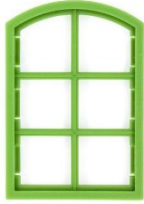
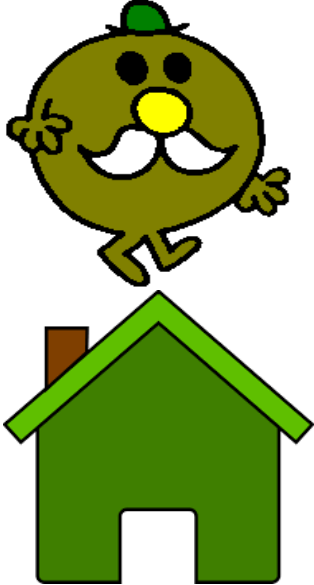
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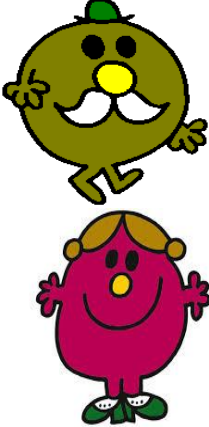


(3) Little Miss Helpful and the Greenhouse

a) Control Story

Page 2 With a name like Helpful you would think that Little Miss Helpful would be helpful, wouldn't you? Well, you'd be wrong. 	Page 3 She wanted to help people more than anything else in the world, but as hard as she tried, she always ended up being unhelpful.  NOT VERY HELPFUL AT ALL !!	Page 4 One day, about a week ago, Little Miss Helpful was sitting on a bus on her way to town. Mr Slow and Mr Happy were sitting in front of her having a conversation.  "I...wish...I...had...a...green...house...but...I...never...get...the...time...to...do...anything" said Mr Slow to Mr Happy. It was a very slow conversation.
Page 5 Just then the bus stopped. 	Page 6 Now what Little Miss Helpful had just overheard had given her an idea. She got off the bus and walked across to Mr Nails's Hardware store and brought all the green paint that he had. Then Mr Nail delivered all the green paint to Mr Slow's house. 	Page 7 I am sure you could guess what she had in mind. That's right. She was going to surprise Mr Slow by helping him paint his house green.  Helpful Little Miss Helpful.

Page 8 Little Miss Helpful started to paint. 	Page 9 She painted all the walls. She painted all the doors. She painted the chimney and the roof! She even painted all the windows. The windowpanes as well as the frames. 	Page 10 When she finished painting the house she still had some paint left over. So she painted the garage as well. Outside and inside. 
Page 11 Little Miss Helpful was terribly pleased with herself. She stood back to admire her hard work. It was then that Mr Slow had arrived back home. In the time that it had taken Miss Helpful to paint his house he had brought a loaf of bread. He isn't called Mr Slow for nothing. Mr Slow had to look twice before he realised his house was still there. 	Page 12 "What...have...you...done?" he exclaimed. "You said that you wanted a green house." Said Miss Helpful, "so there you are" 	Page 13 "That's..not...what..I..meant ..I..want...a...greenhouse" said Mr Slow. "Exactly!" said Miss Helpful "and I painted your house green." "No. I...want...the...sort...of.. greenhouse...that...you... grow...tomatoes...in" explained Mr Slow slowly. 

Page 14 “Oh...” said Little Miss Helpful. “...then what colour did you want your house to be?” 	Page 15 Mr Slow groaned a very slow grown. He could see that it was going to be a very long afternoon. Even for him. 	
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