Malaysian Journal of Social Sciences and Humanities (MJSSH) (e-ISSN : 2504-8562)
2026, Volume 11, Issue 6, e004019
DOI: https://doi.org/10.47405/mjssh.v11i6.4019

RESEARCH ARTICLE

Pragmatic Comprehension Beyond Language: An Exploratory Study of Children with ASD in Malaysia

Niveethene Murugaiah[1*], Raja Rozina Raja Suleiman[2]

[1]School of General Studies and Languages, Faculty of Social Sciences and Leisure Management, 47500 Subang Jaya, Taylor's University, Selangor, Malaysia;
School of Humanities, 11800 USM, Universiti Sains Malaysia, Penang, Malaysia.
Email: Niveethene.Murugaiah@taylors.edu.my
[2]School of Humanities, 11800 USM, Universiti Sains Malaysia, Penang, Malaysia.
Email: rrozina65@gmail.com

CORRESPONDING AUTHOR (*):
Niveethene Murugaiah
(Niveethene.Murugaiah@taylors.edu.my)

KEYWORDS:
Autism spectrum disorder (ASD)
High-functioning autism
Pragmatic comprehension
Contextual inference
Relevance theory

CITATION:
Niveethene, M., & Raja Rozina, R. S. (2026). Pragmatic Comprehension Beyond Language: An Exploratory Study of Children with ASD in Malaysia. *Malaysian Journal of Social Sciences and Humanities (MJSSH), 11*(6), e004019. https://doi.org/10.47405/mjssh.v11i6.4019

ABSTRACT

This exploratory study examines the pragmatic comprehension of four children diagnosed with high-functioning autism spectrum disorder (ASD) in selected special education schools and learning centres in Malaysia. The study investigates the extent to which the children provided correct answers and correct explanations for questions with varying contextual demands, as well as the types of incorrect answers and incorrect explanations produced by them. The occurrence of topics drifts was also examined to determine if the children continued to respond inappropriately after they had provided a correct answer or a correct explanation. A scenario-based pragmatic comprehension instrument developed by Lina (2012) was adopted, and findings are interpreted through Relevance Theory (Sperber & Wilson, 1995). The results indicate that all four children answered reference assignment questions correctly but encountered increasing difficulty with enrichment and implicature questions that require higher contextual processing. The most frequent error type was overgeneralisation of world knowledge. None of the children produced topic drifts. The findings are discussed in relation to cognitive-linguistic characteristics linked with ASD, including deficits in Theory of Mind, weak central coherence, and executive function difficulties. Implications for language therapy and pedagogical support are discussed.

Contribution/Originality: This study contributes to the limited body of research on pragmatic comprehension among English-speaking children with high-functioning ASD in Malaysia, examined through the lens of Relevance Theory. Findings offer implications for language therapy and pedagogical support in the Malaysian context.

1. Introduction

Language serves as the primary medium for expressing thoughts, intentions, and information from one individual to another. Effective communication, however, demands more than merely decoding linguistic forms; it requires speakers and listeners to actively engage and integrate contextual information in the process of meaning-making (Wilson & Sperber, 2004). This ability to effectively derive meaning from context is termed as pragmatic comprehension (Loukusa et al., 2007b). Context encompasses not only the immediate physical and linguistic environment but also all relevant background information, including cultural assumptions, world knowledge, and prior cognitive assumptions, that a listener draws upon during interpretation (Sperber & Wilson, 1995). As such, the degree of contextual integration required differs across various pragmatic tasks, therefore rendering some communicative situations more cognitively demanding than others.

Autism Spectrum Disorder (ASD) is a type of neurodevelopmental condition characterised by persistent deficits in social communication and social interaction across multiple contexts, alongside restricted and repetitive stereotypical behaviours, (American Psychiatric Association [APA], 2013). Across the broad spectrums of autism, even individuals with high-functioning ASD (Asperger Syndrome) (APA, 2013), typically without any clinically significant delays in language and cognitive development, appear to face marked difficulties in engaging in meaningful social conversations. These challenges are particularly evident in situations that require them to integrate various contextual cues to construct meaning in interaction (Lampri et al., 2024; Martin & Mcdonald, 2004; Volden et al., 2009).

Correspondingly, a growing body of research has identified pragmatic language as a vulnerable domain for children with ASD. Notably, studies have found that these children face difficulties in using contextual information to answer pragmatically demanding questions (Loukusa et al., 2007a, 2007b; Loukusa et al., 2018), in drawing inferences linked to narrative contexts (Norbury & Bishop, 2002), in making bridging inferences about physical causation, mental states, and emotional states (Bodner et al., 2015), in comprehending nonliteral language and implicature (Cardillo et al., 2021; Mazzaggio et al., 2021), and in interpreting figurative language (Chahboun et al., 2016; Lampri et al., 2024). Loukusa and Moilanen (2009) argued that pragmatic inference difficulties in high-functioning ASD cannot be attributed to general language impairment alone but rather reflect specific deficits in cognitive mechanisms underlying contextual integration.

In Malaysia, studies on ASD, however, have mainly focused on pedagogical strategies (Omar et al., 2013; Yahya et al., 2013), technology-mediated interventions (Fauzan & Mahayuddin, 2014; Sidek et al., 2014), the psychological experiences of parents (Ting & Chuah, 2010), and more recently, the social communication and pragmatic difficulties of youth with high-functioning ASD (Abdul Samad et al., 2025). To our knowledge, the language and communication abilities of English-speaking children with ASD in Malaysia remain relatively underexplored, particularly from the perspective of Relevance Theory (Sperber & Wilson, 1995; Wilson & Sperber, 2004) in understanding their pragmatic comprehension abilities.

The four participants in this study were recruited from special education settings, namely national and international schools and private learning centres for children with ASD in Penang and Kuala Lumpur. Prior studies on children's pragmatic comprehension have

centred mainly on specific linguistic communities, including Finnish-speaking children (Loukusa et al., 2007a, 2007b, 2008), Mandarin-speaking children in the Philippines (Lina, 2012), and Tamil-speaking children in India (Sankar et al., 2017). Loukusa (2007) called for more studies across different languages and cultural contexts to better understand how linguistic and cultural aspects shape pragmatic comprehension. This position has been reinforced by Kato et al. (2022), who argued that pragmatic deficits in ASD reflect cross-linguistic differences, underscoring the need for investigation across diverse linguistic contexts. Studies examining pragmatic comprehension among English-speaking children with ASD in the Malaysian context remain limited.

1.1. Research Objectives

The present study therefore examines pragmatic comprehension among English-speaking children with ASD in Malaysia, with the following aims:

i. To determine the extent to which children with ASD provide correct answers and correct explanations for questions with different contextual demands;
ii. To identify the types of incorrect answers and incorrect explanations produced by the children; and
iii. To examine the extent to which topic drifts occur after the children provided a correct answer or explanation.

2. Literature Review

2.1. Pragmatic Language in Individuals with Autism Spectrum Disorder

Past studies have consistently identified pragmatic language as a domain of difficulty for individuals with ASD (Cardillo et al., 2021; Loukusa & Moilanen, 2009; Norbury & Bishop, 2002; Reindal et al., 2023). Norbury and Bishop (2002) compared children with ASD, Specific Language Impairment (SLI), Pragmatic Language Impairment (PLI), and typically developing children on story comprehension tasks. Findings showed that children with ASD had trouble drawing inferences related to narrative context, alongside children in the SLI and PLI groups, while typically developing children outperformed all three clinical groups. More recently, Reindal et al. (2023) examined 177 children with ASD and a non-ASD group, revealing that pragmatic challenges were most pronounced among children with ASD, despite their relatively intact structural language abilities. While these studies highlight the pragmatic challenges faced by children with ASD, a more focused body of research has specifically documented deficits in pragmatic comprehension among children with high-functioning ASD.

In pragmatic comprehension tasks, Loukusa et al. (2007b) found that children with high-functioning ASD exhibited challenges, compared to typically developing children, in using relevant contextual information to answer pragmatically demanding questions as the former produced more incorrect answers and explanations, and topic drifts. Subsequently, Loukusa et al. (2007a) grouped the pragmatic errors produced by the ASD group into three categories: incorrect answers (Type 1), incorrect explanations (Type 2), and topic drifts (Type 3). Findings revealed that children with ASD produced more errors due to their overreliance on personal world knowledge than contextual information when interpreting questions, reflecting an inclination to interpret utterances within limited epistemic contexts (Cummings, 2015). Similar patterns of challenges among children with high-functioning ASD have also been documented across other pragmatic tasks. For example, in a study examining conversational implicatures, Mazzaggio et al. (2021) found

that children with ASD, unlike their typically developing peers, faced challenges in pragmatic inferences involving both scalar and ad-hoc implicatures. Meanwhile, Lee et al. (2015) examined idiom comprehension deficits in children with high-functioning ASD and found that they exhibited a stronger tendency toward literal interpretation, thereby failing to use contextual information to understand non-literal meanings, confirming the broader pattern of pragmatic challenges reported by Loukusa et al. (2007a, 2007b).

Besides this, both Loukusa et al. (2018) and Cardillo et al. (2021) independently reported that children with ASD face difficulties in providing explanations and reasoning in contextually demanding questions, suggesting that metacognitive awareness is a particular area of weakness in this group, even when they can fully or partially understand and answer pragmatic questions. This indicates a dissociation between producing correct responses and articulating the reasoning behind them, which has important implications for understanding pragmatic processing difficulties in this population.

Researchers have proposed several factors to explain these performance patterns in children with ASD. One of the most widely cited accounts is Theory of Mind (ToM) deficits (Baron-Cohen et al., 1985), referring to a reduced ability to understand others' perspectives (Cardillo et al., 2021; Martin & McDonald, 2004). In addition, other cognitive mechanisms have been implicated, including weak central coherence, which reflects a tendency to process information locally rather than integrating it into a broader, coherent whole (Frith, 2003; Vulchanova et al., 2012), and executive dysfunction, particularly difficulties in directing attention to relevant contextual cues and inhibiting prior responses (Loukusa & Moilanen, 2009). Ultimately, these factors suggest that pragmatic comprehension difficulties in children with ASD may represent a specific weakness that is partly independent of general language ability, underscoring the need for targeted intervention.

Despite the growing body of research, pragmatic comprehension among English-speaking children with ASD in the Malaysian context remains underexplored, largely due to the limited number of studies and the restricted availability of suitable participants. This further highlights the need for research that is grounded in the local context.

2.2. Relevance Theory as Theoretical Framework

Relevance Theory (Sperber & Wilson, 1995; Wilson & Sperber, 2004) examines meaning-making from a cognitive-pragmatic perspective. The theory highlights that human cognitive processes are inherently directed towards the maximisation of relevance, and that communicative acts carry a presumption of optimal relevance for the listener. Two principles underpin the framework. First, the Cognitive Principle of Relevance states that 'human cognition tends to be geared to the maximisation of relevance' (Sperber & Wilson, 1995, p. 260), whereby the listener favours the interpretations that produce the greatest positive cognitive effects with minimal processing effort. Second, the Communicative Principle of Relevance highlights that every act of communication is assumed to be optimally relevance (Sperber & Wilson, 1995, p. 270), meaning that speakers produce utterances that are worth the listener's processing effort without unnecessary ambiguity.

Relevance Theory is particularly suitable to examine pragmatic comprehension in children with ASD as it foregrounds both cognitive processing and contextual integration as key mechanisms of pragmatic comprehension, an area that is often challenging for this group (Loukusa, 2007; Martin & McDonald, 2004). More importantly, the theory explains

why questions with higher contextual demands are more cognitively challenging. For instance, enrichment and implicature questions require the listener to go beyond decoded linguistic meaning and integrate multiple sources of contextual information, thereby demanding greater processing effort. Notably, Relevance Theory has been employed in studies examining the pragmatic challenges of typically developing children (Lina, 2012; Loukusa et al., 2008; Sankar et al., 2017), children with SLI (Ryder & Leinonen, 2014; Ryder et al., 2008), and children with ASD (Loukusa et al., 2007a, 2007b), making it a well-established and widely used framework in this area of research.

3. Research Methods

3.1. Research Design and Participants

This study adopts a small-scale exploratory descriptive design. Due to the study's non-experimental nature, no variables were manipulated and no control group was employed. Such a design is particularly suited to investigating a specific population, especially in contexts where the phenomenon is underexplored and sample availability is limited, allowing for a systematic documentation and description of patterns of performance within a defined group (Dörnyei, 2007). In line with that, this study employs quantitative analysis (average scores and error frequencies), complemented by qualitative examination of response types and illustrative examples, which enable a more holistic account of the data within an exploratory framework.

Seven children clinically diagnosed with ASD were initially identified from national and international schools and private learning centres for children with special needs in Penang and Kuala Lumpur. Following a careful review of their diagnostic records and English language proficiency, four were selected (see Table 1). Three were excluded from the study: one due to uncertainty about the precise ASD subtype and co-occurring difficulties including speech delays, attention deficits, and hyperactivity; the remaining two due to their adequate English language proficiency to participate meaningfully in the study. Meanwhile, all four selected participants were aged between 10 and 14 years and had full-scale IQ scores within the normal range. Additionally, their records showed no evidence of significant language delays, learning disabilities, neurological conditions, or hearing impairments. All of them had received at least three years of English language instruction at their learning centres prior to the study, confirming their ability to engage with the study's task materials.

Table 1: Demographic Profiles of Participants

Participant	Age (years)	Gender	Diagnosis	English Exposure (Years)
Nick	10	Boy	ASD	3
Patrick	10	Boy	ASD	3
Adriel	14	Boy	ASD	7
Kevin	12	Boy	ASD	5

Note: All names are pseudonyms.

3.2. Ethical Considerations

Prior to data collection, written permission was obtained from the coordinators of participating special education schools and learning centres through an institutional approval form issued by the researcher's affiliated institution. Given that the study involved minors, an informed consent form was prepared, distributed to, and signed by the parents or guardians of each participant to record their approval for their child's participation.

All participants were informed about the study by their parents or guardians prior to its commencement, and all of them agreed voluntarily to participate. To help establish familiarity and ensure the participants felt comfortable with the researcher's presence, brief one-to-one conversations were conducted before the test session. No formal institutional review board (IRB) or ethics committee approval was required for this study. To protect the participants' identities and maintain confidentiality, the pseudonyms Nick, Patrick, Adriel, and Kevin are used throughout the reporting of the findings.

3.3. Materials and Procedure

The pragmatic comprehension instrument developed by Lina (2012) was adopted for data collection. The instrument was originally designed to investigate children's ability to answer contextually demanding questions in a Philippine educational context. Lina (2012) instrument was chosen due to its relevance to this study's objectives and focus on contextually demanding pragmatic comprehension scenario-based tasks. Similar pragmatic comprehension instruments have also been adopted in studies involving different populations, including typically developing children (Sankar et al., 2017) and children with high-functioning ASD (Loukusa et al., 2007b), in examining their pragmatic language abilities.

The instrument comprises nine scenario-based questions across three levels of contextual demand: three reference assignment questions, three enrichment questions, and three implicature questions. Each set of questions is complemented with an illustrated scenario, which was presented to the participant during the test administration. Reference assignment questions require participants to identify a specific referent mentioned in the scenario. Enrichment questions require participants to interpret and enrich incomplete semantic content (e.g., interpreting 'now' or 'there') by drawing on verbal and pictorial context. Implicature questions require participants to integrate verbal and visual contextual information with their world knowledge to derive implicit meaning. For each correct response to the enrichment and implicature questions, participants were asked to explain their answers through follow-up probes ('How do you know that?' or 'Why do you think so?'), to assess their metalinguistic awareness of the inferential process.

Each participant was assessed individually in a one-to-one format at their respective special education learning centre. Prior to the test session, a brief rapport-building conversation was held with each participant. During the session, the illustrated scenario materials were placed on a table directly in front of the participant; the researcher was seated across the table to facilitate eye contact. Each scenario was read aloud, followed by the corresponding questions in sequence. Each session lasted approximately 20-25 minutes, with brief breaks between scenarios. Following that, all responses were audio-recorded and subsequently transcribed following the conversation analysis transcription conventions of Liddicoat (2011).

3.4. Data Analysis

Responses were scored as correct (1 mark) or incorrect (0 marks). A response received one mark if it was contextually appropriate and accurately addressed the focus of the question based on the verbal and pictorial information provided in the scenario. Zero marks were assigned to responses that were contextually inappropriate, off-topic, or absent. Average scores and average percentage scores were then calculated for correct answers and correct explanations for each question type.

Meanwhile, incorrect answers and explanations were further classified using the error categorisation framework of Loukusa et al. (2007a), which comprises eight subcategories: incorrect focus, world knowledge, given information, don't know, totally irrelevant, tautology, turn-taking, and other. Topics drifts, where participants continued producing information irrelevant to the task after providing a correct answer or explanation, were also identified and classified according to the same framework.

Interrater reliability was established using a second rater, a special education teacher with a bachelor's degree in psychology and over three years of experience teaching students with special needs. Prior to scoring participants' responses and explanations, the rater was briefed on the test instrument, classification categories, and scoring framework to ensure consistency in rating procedures. Interrater reliability was then assessed by calculating percentage agreement between the researcher and the second rater. Agreement ranged from 0.813 to 1.000, indicating satisfactory reliability for both scoring and error categorisation.

4. Results

4.1. Correct Answers and Explanations

Table 2 shows that all four children answered all three reference assignment questions correctly (average score = 3/3; 100%). Performance declined substantially for enrichment questions (average score = 1.50/3; 50%) and was lowest for implicature questions (average score = 0.50/3; 16.67%). This gradient implies that performance was inversely related to the degree of contextual processing required by each question type.

Table 2: Average Correct Answers by Question Type

Question Type (Max = 3)	Average Score for Correct Answers	Average Percentage Score (%)
Reference Assignment	3.00	100.00
Enrichment	1.50	50.00
Implicature	0.50	16.67

Table 3 shows that the children's ability to explain their correct answers was markedly lower than their ability to provide those answers. For enrichment questions, the average explanation score was 0.50/3 (16.67%). For implicature questions, no participant provided a correct explanation, yielding an average score of 0.00/3 (0%). This divergence between participants' response accuracy and explanation quality is particularly evident in implicature questions, suggesting that even when they produced contextually

appropriate answers, they were often unable to articulate the inferential processes underlying their responses.

Table 3: Average Correct Explanations by Question Type

Question Type (Max = 3)	Average Score for Correct Explanations	Average Percentage Score (%)
Enrichment	0.50	16.67
Implicature	0.00	0.00

4.2. Types of Incorrect Answers and Explanations

Table 4 shows that the majority of incorrect answers (43.75%) were classified under 'world knowledge'. For example, for the enrichment question 'What time might 'now' be?', one participant responded, 'I'm thinking 2 p.m.' Rather than drawing on the verbal and pictorial context, which signalled a morning setting, the participant answered based on his personal experience, producing a response that was semantically related to time but contextually inaccurate. 'Incorrect focus' and 'don't know' responses each made up 18.75% of the incorrect answers. For the implicature question 'Why does the rabbit bang the mushroom down?', one participant responded, 'Because it's raining'. While the response reflected some awareness of the scenario, it does not fully address the intended focus of the question. 'Don't know' responses occurred when a participant stated, 'I do not know', 'I have no idea', or 'No idea' without further elaboration. 'Tautology' accounted for the smallest proportion of errors (6.25%), involving repetition of the question or a fragment of it.

Table 4: Incorrect Answers Produced by Children with ASD (n = 4)

Type of Incorrect Answer	Frequency (f)	Percentage (%)
Incorrect focus	3	18.75
World knowledge	7	43.75
Given information	0	0
Don't know	3	18.75
Totally irrelevant	2	12.50
Tautology	1	6.25
Turn-taking	0	0
Other	0	0
Total	16	100

Table 5 shows that 'incorrect focus' was the common error type in explanations (66.67%). For example, when asked to explain a correct answer to an implicature question ('Why does the little ant run to the mushroom?'), one participant responded, 'Because it's raining'. Although the participant's explanation was not completely off topic, there was not specific reasoning as to why the mushroom was the destination rather than another location, thereby failing to address the focus of the follow-up question. Meanwhile, 'World

knowledge' and 'Don't know' each accounted for 16.67% of incorrect explanations. For instance, a participant who had provided the correct answer 'So, he won't get wet' was asked 'How do you know that?' and responded 'Maybe he doesn't want to get wet', thereby applying world knowledge or his personal experience rather than relating to the specific contextual evidence from the scenario.

Table 5: Incorrect Explanations Given by Children with ASD (n = 4)

Type of Incorrect Explanation	Frequency (f)	Percentage (%)
Incorrect focus	4	66.67
World knowledge	1	16.67
Given information	0	0
Don't know	1	16.67
Totally irrelevant	0	0
Tautology	0	0
Turn-taking	0	0
Other	0	0
Total	6	100

4.3. Topic Drifts

Table 6 shows that none of the four participants produced topic drifts. All children (100%) stopped processing after providing a correct answer or explanation, without producing irrelevant continuations.

Table 6: Occurrence of Topic Drifts After a Correct Answer or Explanation

Number of Topic Drifts	Number of Children	Percentage (%)
0	4	100
1	0	0
≥ 2	0	0

5. Discussion

The findings consistently demonstrated differences in performance among the children with ASD that corresponded to the contextual demands of each question type. All participants managed to provide accurate answers for each reference assignment question, which required the most explicit mapping to the contextual information provided during the test sessions and the least amount of inferential processing. This pattern mirrors findings from previous studies reporting that children with ASD performed comparatively better on reference assignment tasks (Loukusa et al., 2007b) and tasks requiring literal rather than inferential comprehension (Norbury & Bishop, 2002). The results are also consistent with Relevance Theory (Sperber & Wilson, 1995),

as reference assignment questions demand minimal contextual integration and therefore the least processing effort, making them the most accessible task type for this group.

Performance declined substantially for both enrichment and implicature questions, indicating that increased pragmatic demands are associated with reduced performance among children with ASD. This pattern has been observed across studies using different materials and populations. Loukusa et al. (2007b) reported that Finnish-speaking children with ASD experienced difficulties interpreting and enriching incomplete semantic content that required drawing on contextual information. For implicature questions, the most contextually demanding task type, Cardillo et al. (2021) found that children with ASD showed greater difficulties on contextual inferencing tasks, while Mazzaggio et al. (2021) similarly reported that children with ASD were consistently unable to derive the intended meaning of ad-hoc implicatures, a finding that aligns with the near-zero implicature performance observed in the present study. Theoretically, these challenges can be explained by the Cognitive Principle of Relevance (Sperber & Wilson, 1995): children with ASD struggle to consistently identify and integrate the most contextually relevant information when responding, and this difficulty becomes more pronounced as the inferential demands of the question increase, resulting in more errors. This account is also consistent with explanations emphasising Theory of Mind deficits (Baron-Cohen et al., 1985; Cardillo et al., 2021; Martin & McDonald, 2004), weak central coherence (Frith, 2003; Vulchanova et al., 2012), and executive function limitations (Loukusa & Moilanen, 2009) as predictors of pragmatic comprehension difficulties.

The prevalence of 'world knowledge' errors in incorrect responses is also noteworthy. Rather than drawing on the contextual information provided in the scenario-based tasks, participants relied on personal experience or general knowledge that was loosely related to the question but not precisely relevant to its communicative intent. This corresponds to Loukusa et al.'s (2007a) finding and is consistent with Cummings's (2015) observation that individuals with pragmatic disorders tend to interpret utterances based on restricted epistemic contexts. From a ToM perspective, Cardillo et al. (2021) attributed this pattern to a limited capacity to consider others' communicative intentions, resulting in responses that are self-referential rather than contextually sensitive. The instances of 'incorrect focus' errors, where children demonstrated partial understanding but failed to address the precise communicative intent of the question, further reflect difficulties in directing attention to the most contextually relevant elements, as noted by Volden (2002) in relation to children with HFA, and consistent with Mazzaggio et al.'s (2021) finding that failures on implicature tasks in ASD are predominantly characterised by an inability to identify the intended communicative focus.

The participants' inability to provide correct explanations for initially correct answers, particularly for implicature questions, where no participant managed to provide an accurate explanation, suggests a dissociation between successful pragmatic processing and explicit metalinguistic awareness of that process. Loukusa et al. (2018) reported that difficulties in explaining correct answers reflect limitations in metacognitive awareness rather than failures of comprehension per se, a position supported by Cardillo et al. (2021), who found that even children who arrived at correct responses struggled to articulate the inferential reasoning behind their answers. Martin and McDonald (2004) attributed this to ToM limitations that affect one's ability to engage in reflective thinking about one's own cognitive processes. In the present study, although participants managed to provide contextually appropriate answers, they were unable to verbalise their inferential process, suggesting that pragmatic processing in children with ASD may

operate implicitly without generating metacognitive representations that can be consciously accessed or articulated.

The absence of topic drifts across all four participants is worth highlighting, as all of them ceased processing at the appropriate point after providing correct answers or explanations. This corresponds to the Communicative Principle of Relevance (Sperber & Wilson, 1995, p. 270), whereby every utterance communicates a presumption of optimal relevance, requiring speakers to ensure their contributions are informative and worth their audience's processing effort. The participants appeared to recognise when they had provided adequate information and their expectation of relevance had been satisfied, regulating their discourse processing and refraining from adding unnecessary information in a timely manner. Loukusa and Moilanen (2009) argued that topic drifts are more common among children who have not yet developed adequate regulatory control over their discourse processing. The absence of such drifts in this study therefore suggests that the participants had developed sufficient capacity to monitor and terminate their responses once communicative expectations were fulfilled.

6. Limitations

This study has several limitations. First, the small number of participants limits the generalisability of the findings beyond the individuals examined. Although this is consistent with the exploratory nature of the study, it should nevertheless be acknowledged. Second, the absence of a control group of typically developing Malaysian children makes it difficult to establish a baseline for performance. As a result, it remains unclear whether the observed performance patterns are specific to ASD or reflect broader characteristics of the communicative context within this population. Third, no formal baseline language assessments were administered at the time of the study, and differences in participants' language proficiency may have contributed to variations in performance. Fourth, participant recruitment was confined to two Malaysian states, which may not adequately represent the broader national population. Future research should address these limitations by recruiting larger and more diverse samples, including typically developing children as control groups, and incorporating formal baseline language assessments prior to conducting studies.

7. Conclusion

This exploratory study examined the pragmatic comprehension of four children with ASD in Malaysia using Relevance Theory (Sperber and Wilson, 1995) as an interpretive framework. The gradual decline in the children's performance as contextual demands increased is consistent with the Theory of Mind deficits commonly associated with ASD, particularly the limited ability to infer communicative intentions and interpret nonliteral meanings (Baron Cohen et al., 1985; Cardillo et al., 2021). More specifically, the predominant reliance on world knowledge and the inconsistency in addressing the specific focus of contextually demanding questions reflect weak central coherence (Frith, 2003), whereby individuals with ASD tend to focus on local details rather than integrating information into a broader and coherent interpretation. Meanwhile, their inability to explain their correct responses further points to challenges in executive functioning, which affects metalinguistic awareness and the ability to articulate inferential thought processes (Loukusa and Moilanen, 2009; Martin and McDonald, 2004).

The findings of this study highlight the need for more constructive language therapy and classroom instruction that explicitly guide children with ASD to identify and use relevant contextual information during comprehension and communication tasks. This is particularly important because, in most communicative situations, speakers often express intentions implicitly and expect interlocutors to draw on contextual cues and shared knowledge to derive meaning. Therapists and educators may also incorporate scaffolding activities regularly to help children with ASD develop greater metalinguistic awareness of inferential reasoning.

Ethics Approval and Consent to Participate

This study did not require formal ethics committee approval as it was conducted as part of a postgraduate research programme at Universiti Sains Malaysia (USM), where institutional ethics review was not mandated for studies of this nature at the time of data collection. Prior to data collection, written permission was obtained from the coordinators of the participating special education schools and learning centres through an institutional approval form issued by the School of Humanities, USM. As the study involved minors, a parental consent form was distributed to and signed by the parents or guardians of all participants to indicate their approval for their child's participation.

Acknowledgment

The authors would like to thank the coordinators and teachers at the special education schools and learning centres for their cooperation and assistance during the data collection process. Special thanks are also extended to the children who participated in this study and to their parents for their generous support in allowing their children to be part of this research.

Funding

This study received no funding.

Conflicts of Interest

The authors declare there are no conflicts of interest.

References

Abdul Samad, F. D., Wan Ismail, W. S., Ahmad Basri, M. A. F., Chong, S. K., Mohd Tohit, N., Kamal Nor, N., Mohamad Aun, N. S., & Ahmad, M. N. (2025). Exploring social skills difficulties of youth with high functioning autism spectrum disorder (HFASD) in Malaysia: Comparison of perspectives from youth, parents and professionals. *International Journal of Developmental Science, 19*(1-2), 57–71.https://doi.org/10.1177/2192001X251325879

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association. https://doi.org/10.1176/appi.books.9780890425596

Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985). Does the autistic child have a 'theory of mind'? *Cognition*, *21*(1), 37–46. https://doi.org/10.1016/0010-0277(85)90022-8

Bodner, K. E., Engelhardt, C. R., Minshew, N. J., & Williams, D. L. (2015). Making inferences: Comprehension of physical causality, intentionality and emotions in discourse by high-functioning older children, adolescents, and adults with autism. *Journal of Autism and Developmental Disorders*, *45*(9), 2721–2733. https://doi.org/10.1007/s10803-015-2436-3

Cardillo, R., Mammarella, I. C., Demurie, E., Giofrè, D., & Roeyers, H. (2021). Pragmatic language in children and adolescents with autism spectrum disorder: Do theory of mind and executive functions have a mediating role? *Autism Research*, *14*(5), 932–945. https://doi.org/10.1002/aur.2423

Chahboun, S., Vulchanov, V., Saldaña, D., Eshuis, H., & Vulchanova, M. (2016). Can you play with fire and not hurt yourself? A comparative study in figurative language comprehension between individuals with and without autism spectrum disorder. *PLoS ONE*, *11*(12), Article e0168571. https://doi.org/10.1371/journal.pone.0168571

Cummings, L. (2015). Theory of mind in utterance interpretation: The case from clinical pragmatics. *Frontiers in Psychology*, *6*, Article 1286. https://doi.org/10.3389/fpsyg.2015.01286

Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.

Fauzan, N., & Mahayuddin, N. A. M. (2014). Brain training to improve sociability and behavior of autism spectrum disorder (ASD) children and young adults. *Procedia – Social and Behavioral Sciences*, *143*, 308–314. https://doi.org/10.1016/j.sbspro.2014.07.410

Frith, U. (2003). *Autism: Explaining the enigma* (2nd ed.). Blackwell.

Kato, S., Hanawa, K., Linh, V. P., Saito, M., Iimura, R., Inui, K., & Nakamura, K. (2022). Toward mapping pragmatic impairment of autism spectrum disorder individuals through the development of a corpus of spoken Japanese. *PLoS ONE*, *17*(2), Article e0264204. https://doi.org/10.1371/journal.pone.0264204

Lampri, S., Peristeri, E., Marinis, T., & Andreou, M. (2024). Figurative language processing in autism spectrum disorders: A review. Autism Research, 17(4), 674–689. https://doi.org/10.1002/aur.3069

Lee, S. B., Song, S. H., Ham, J. H., Song, D. H., & Cheon, K. A. (2015). Idiom comprehension deficits in high-functioning autism spectrum disorder using a Korean autism social language task. *Yonsei Medical Journal*, *56*(6), 1613–1618. https://doi.org/10.3349/ymj.2015.56.6.1613

Liddicoat, A. J. (2011). *An introduction to conversation analysis* (2nd ed.). Continuum.

Lina, T. (2012). Explicit or implicit? Children's ability to answer contextually demanding questions. *Philippine ESL Journal*, *8*, 26–51.

Loukusa, S. (2007). *The use of context in pragmatic language comprehension in normally developing children and children with Asperger syndrome/high-functioning autism: An application of relevance theory* [Doctoral dissertation, University of Oulu]. Jultika. http://jultika.oulu.fi/files/isbn9789514285783.pdf

Loukusa, S., Leinonen, E., Jussila, K., Mattila, M.-L., Ryder, N., Ebeling, H., & Moilanen, I. (2007a). Answering contextually demanding questions: Pragmatic errors produced by children with Asperger syndrome or high-functioning autism. *Journal of Communication Disorders*, *40*(5), 357–381. https://doi.org/10.1016/j.jcomdis.2006.10.001

Loukusa, S., Leinonen, E., Kuusikko, S., Jussila, K., Mattila, M.-L., Ryder, N., Ebeling, H., & Moilanen, I. (2007b). Use of context in pragmatic language comprehension by children with Asperger syndrome or high-functioning autism. *Journal of Autism and Developmental Disorders*, *37*(6), 1049–1059. https://doi.org/10.1007/s10803-006-0247-2

Loukusa, S., Mäkinen, L., Kuusikko-Gauffin, S., Ebeling, H., & Leinonen, E. (2018). Assessing social-pragmatic inferencing skills in children with autism spectrum disorder. *Journal of Communication Disorders*, *73*, 91–105. https://doi.org/10.1016/j.jcomdis.2018.01.006

Loukusa, S., & Moilanen, I. (2009). Pragmatic inference abilities in individuals with Asperger syndrome or high-functioning autism: A review. *Research in Autism Spectrum Disorders*, *3*(4), 890–904. https://doi.org/10.1016/j.rasd.2009.05.002

Loukusa, S., Ryder, N., & Leinonen, E. (2008). Answering questions and explaining answers: A study of Finnish-speaking children. *Journal of Psycholinguistic Research*, *37*(3), 219–241. https://doi.org/10.1007/s10936-007-9067-6

Martin, I., & McDonald, S. (2004). An exploration of causes of non-literal language problems in individuals with Asperger Syndrome. *Journal of Autism and Developmental Disorders*, *34*(3), 311–328. https://doi.org/10.1023/B:JADD.0000029553.52889.15

Mazzaggio, G., Foppolo, F., Job, R., & Surian, L. (2021). Ad-hoc and scalar implicatures in children with autism spectrum disorder. *Journal of Communication Disorders*, *90*, Article 106089. https://doi.org/10.1016/j.jcomdis.2021.106089