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Saying What You Want: A Neuropragmatic Study of Telegraphic Directives and Theory of Mind in an Adolescent with ASD

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ABSTRACT

Individuals with Autism Spectrum Disorder (ASD) frequently exhibit atypical pragmatic language patterns, yet the relationship between directive speech act production, telegraphic speech, and Theory of Mind (ToM) deficits remains underexplored from a neuropragmatic perspective. This qualitative case study investigated the directive utterances produced by a 15-year-old adolescent with ASD attending an inclusive classroom at SMPN 23 Padang, Indonesia. Data were collected over nine days of participant observation, video recordings, and the administration of the Sally-Anne false-belief test. A total of 140 directive utterances were analyzed using Ervin-Tripp's (1976) classification system. The results revealed that imperatives constituted most directive types (50%), followed by question directives (18.57%), hints (16.43%), permission directives (13.57%), and need statements (1.43%). No embedded imperatives were produced. The participant consistently employed telegraphic speech and failed the ToM test, indicating an inability to attribute false beliefs to others. From a neuropragmatic standpoint, these patterns – dominance of imperatives, absence of syntactically complex forms, and telegraphic reduction – suggest a delayed neurocognitive trajectory resembling that of typically developing children aged 2–6 years rather than intentional noncompliance. The findings imply that inclusive education practices should incorporate neuropragmatic awareness to better interpret and support the communicative intentions of adolescents with ASD.

Keywords: Autism Spectrum Disorder, directive speech acts, inclusive education neuropragmatics, telegraphic speech, theory of mind

1. Introduction

Why would a teenager utter a single word like "Pen!" when trying to borrow one from a classmate – and yet fully expect to be complied with? This question captures a central puzzle in the communication of individuals with Autism Spectrum Disorder (ASD). Typically developing speakers naturally tailor their requests according to the listener's presumed knowledge, social standing, and emotional state, a process that unfolds automatically in daily conversation. In contrast, adolescents with ASD frequently fail to make such

adjustments, producing speech that may come across as abrupt, incomplete, or socially inappropriate – although the underlying cause is often neurocognitive rather than deliberate. They use speech for agreeing, responding to questions, and requesting, aligning with the use of minimal utterances to express requests (La Valle, Plesa-Skwerer, & Tager-Flusberg, 2020).

SD is classified as a neurodevelopmental condition marked by lasting impairments in social communication alongside restricted, repetitive behavioral patterns (American Psychiatric Association, 2013). Globally, ASD affects roughly one child in every hundred (World Health Organization, 2023), and awareness has been growing in nations such as Indonesia, even though precise national prevalence figures remain scarce (Prasetyoningsih, Suhartoyo, & Ubaidillah, 2020). Pragmatic language – the socially situated use of language – is among the most heavily impacted domains, with documented difficulties spanning speech act production and comprehension, conversational turn-taking, and the interpretation of non-literal meanings (Cummings, 2017). Within pragmatics, directive speech acts (e.g., commands, requests, suggestions, and prohibitions) are especially critical for everyday functioning. When directives are produced atypically, they can significantly undermine a student's social integration and academic engagement, particularly in classroom environments (Minsih et al., 2025).

A number of investigations have explored speech act usage in ASD. In a study involving Indonesian autistic children, (Prasetyoningsih et al, 2020) found that only three illocutionary act categories emerged – directive, expressive, and assertive – whereas commissive and declarative forms were completely absent. Those authors also observed a strong preference for direct literal speech act strategies, with imperatives and simple questions appearing most frequently. In a different context, Hadiyani et al. (2024) examined how a young adult with ASD responded to directives during a podcast interview; the participant typically gave very brief answers (one or two words), often repeated himself, or produced responses that were tangentially related to the question asked. Meanwhile, research on inclusive schooling has shown that students with ASD commonly display repetitive movements, poor concentration, limited social engagement, and a tendency to echo others' sentences – all of which directly compromise their capacity to formulate appropriate directives (Minsih et al., 2025).

Nevertheless, the existing literature has largely concentrated on either directive comprehension or broad taxonomies of speech acts in children with ASD. Relatively little attention has been paid to the production of directives by adolescents with ASD in naturalistic inclusive classroom environments, especially within non-Western educational systems such as Indonesian (Yulian & Mandarani, 2023). Furthermore, the connection between directive production and two specific features – telegraphic speech (i.e., utterances stripped down to essential content words) and Theory of Mind (ToM) impairments – remains underexplored. Telegraphic speech is a normal phase in early language acquisition, typically seen between ages two and six (Brown, 1973; Nneka, 2012), but its persistence into adolescence suggests delayed neurocognitive maturation. ToM deficits, which are well established in ASD (Baron-Cohen, Leslie, & Frith, 1985), are known to hamper pragmatic competence because formulating an effective directive requires the speaker to appreciate what the listener knows, believes, and desires.

A neuropragmatic approach offers a unifying framework by connecting pragmatic performance with its neural substrates. Neuropragmatics investigates how brain systems – notably the medial prefrontal cortex and the temporoparietal junction, both of which show reduced activity in ASD during mentalizing tasks – support the production and interpretation of speech acts (Van Overwalle et al., 2019; Wilson, Rueschemeyer, & Gunter, 2021). From this vantage point, the overuse of imperatives and telegraphic forms by individuals with ASD is not a sign of willful disrespect but rather a manifestation of neurocognitive limitations: impaired ability to construct syntactically complex utterances and to infer the listener's mental state. This perspective also accounts for the near-absence of embedded imperatives (e.g., "Could you…?") in ASD, as such forms demand both syntactic sophistication and social perspective-taking (Eigsti, Bennetto, & Dadlani, 2007).

Growing empirical evidence supports the link between directive production patterns and specific neural anomalies in ASD. Functional imaging studies have consistently demonstrated hypoactivation in the right temporoparietal junction and dorsomedial prefrontal cortex during tasks that require inferring others' mental states, regions that are essential for tailoring directives to the listener (Van Overwalle et al., 2019). Moreover, longitudinal data indicate that the persistence of telegraphic speech beyond early childhood correlates with abnormal white-matter integrity in the arcuate fasciculus, a fiber tract critical for grammatical processing (Wilson et al., 2021). Collectively, these findings strengthen the argument that the directive profile seen in adolescents with ASD – reliance on imperatives, absence of polite embedded forms, and

telegraphic reductions – arises from underlying neurodevelopmental differences rather than from simple behavioral choice.

Historically, the study of the neural underpinnings of pragmatic processes began to coalesce in the early 2000s, building on two decades of research on pragmatic difficulties in clinical populations. As Bischetti, Frau, and Bambini (2024) define it, neuropragmatics investigates the neurocognitive basis of pragmatic processes as conceptualised within the Gricean tradition, with a particular emphasis on the inferential activities that support the comprehension of intended meanings and the production of discourse and conversation. Because of its connection with both linguistic and socio-cognitive functioning, neuropragmatics occupies an interdisciplinary space that straddles neurolinguistics, theoretical and experimental pragmatics, and cognitive neuroscience (Bischetti et al., 2024). The field now encompasses diverse research strands, from clinical pragmatics focused on communication disorders to neuroscience-based investigations using neuroimaging and electrophysiological recordings. Key contemporary debates revolve around the relationship between pragmatic abilities and other cognitive skills, including the hypothesis that pragmatics may function as a dedicated mind-reading module (Bischetti et al., 2024). Neuropragmatic studies have documented diffuse pragmatic breakdowns across a wide range of clinical groups, including not only ASD but also schizophrenia, traumatic brain injury, multiple sclerosis, and amyotrophic lateral sclerosis (Bambini, 2012; Bischetti et al., 2024). This broad applicability underscores the importance of adopting a neuropragmatic lens when examining any population – such as adolescents with ASD in inclusive classrooms – where pragmatic language is compromised.

Beyond its theoretical contributions, neuropragmatics carries substantial societal implications, particularly for the classification, diagnosis, and remediation of pragmatic difficulties. Bischetti, Frau, and Bambini (2024) argue that, given the centrality of communication in human life, a well-informed neuropragmatic approach can offer a better foundation for assessing and treating pragmatic language disorders, thereby contributing to the promotion of individual well-being. This perspective is especially pertinent in inclusive educational settings, where teachers and shadow educators may inadvertently misinterpret telegraphic directives – such as a student saying "Pencil!" instead of "May I please use your pencil?" – as defiance or disrespect (Minsih et al., 2025). Without an explanatory framework that recognises the underlying neurocognitive constraints, school staff may resort to behavioural corrections that fail to address the root causes of the pragmatic difficulty. Moreover, in Indonesia, most clinical and educational interventions for ASD continue to rely heavily on behavioural modification techniques such as Applied Behavior Analysis (ABA), with limited integration of pragmatic or neurocognitive training (Prasetyoningsih et al., 2020). This situation highlights the urgent need for research that not only catalogues directive production patterns but also interprets them through a neuropragmatic lens, thereby guiding the development of more effective, brain-based teaching strategies.

From a neuropragmatic standpoint, the specific pattern of directive production observed in this study – the dominance of imperatives, the absence of syntactically complex embedded forms, and the pervasive use of telegraphic speech – can be interpreted as reflecting delayed neurocognitive maturation rather than intentional noncompliance. Neuropragmatic research has consistently shown that effective directive use requires the integration of several brain networks, including regions implicated in Theory of Mind (e.g., the medial prefrontal cortex and temporoparietal junction) as well as areas supporting syntactic processing (e.g., the left inferior frontal gyrus) (Bambini, 2012; Solymosi, 2025). In individuals with ASD, hypoactivation in these regions has been linked to difficulties in mental state attribution and in producing grammatically complex utterances (Eigsti et al., 2007; Van Overwalle et al., 2019). The participant's failure on the Sally-Anne false-belief test, combined with his heavy reliance on imperatives and telegraphic reductions, aligns precisely with this neurocognitive profile. Furthermore, right-hemisphere contributions to macrostructure processing – including the integration of contextual information, emotional words, and implicit relations – are known to be compromised in individuals with pragmatic language disorders, a finding that resonates with the participant's difficulty in producing contextually appropriate embedded directives (Bambini, 2012; Handoko, 2015). Thus, what might appear from a purely behavioural perspective as simple rudeness or non-compliance is, from a neuropragmatic perspective, more accurately understood as a manifestation of underlying neural constraints that impede the flexible, context-sensitive use of language.

Consequently, the present study addresses two primary research questions: (1) Which subtype of directive speech act occurs most frequently in the speech of an adolescent with ASD within an inclusive classroom? (2) How does this adolescent communicatively produce directives, and in what ways do these production patterns relate to telegraphic speech and Theory of Mind when interpreted neuropragmatically?

Employing a qualitative case study design, the first author conducted participant observation over nine days in an inclusive classroom at SMPN 23 Padang, Indonesia. The principal finding is that imperatives account for fully half (50%) of the 140 directive utterances recorded, telegraphic speech is consistently used, and the participant fails the Sally-Anne false-belief test. This pattern closely mirrors the directive production of typically developing children aged two to six years, suggesting a delayed neurocognitive trajectory rather than intentional non-compliance – a finding with direct implications for inclusive pedagogy and clinical practice.

2. Method

This study employed a descriptive-qualitative case study design (Yin, 2018) to investigate the production of directive speech acts by an adolescent with Autism Spectrum Disorder (ASD) in an inclusive classroom setting. The design was chosen because it allows for in-depth, naturalistic observation of pragmatic phenomena without experimental manipulation, which is essential for capturing authentic communication patterns in individuals with ASD (Creswell & Poth, 2016). The study was grounded in two theoretical pillars: the classification of directive speech acts proposed by Ervin-Tripp (1976) and the neuropragmatic framework that links pragmatic production to underlying brain mechanisms (Bambini, 2012; Bischetti et al., 2024). Ervin-Tripp's taxonomy distinguishes six structural variations of directives – need statements, imperatives, embedded imperatives, permission directives, question directives, and hints – which have been widely applied in studies of both typical and clinical populations. The neuropragmatic perspective provided the interpretive lens for understanding why an adolescent with ASD might predominantly produce imperatives and telegraphic speech rather than more polite or syntactically complex forms.

The data source was a 15-year-old male student diagnosed with ASD, attending the eighth grade in an inclusive classroom at SMPN 23 Padang, Indonesia. He was selected purposively because he exhibited spontaneous verbal production – an uncommon ability among individuals with ASD – yet continued to show clear pragmatic difficulties, particularly in formulating directive speech acts. The school was chosen for its established inclusive education programme, which included supporting facilities such as a speech therapy room and shadow teachers. Informed consent was obtained from the participant's parents and from the school principal, and the student's own assent was also secured, following ethical guidelines for research with minors (Minsih et al., 2025).

Data were collected over nine consecutive school days using participant observation and video recording. The first author joined the student during break times and non-academic sessions in the inclusive resource room, where natural interactions occurred with peers, shadow teachers, and the researcher herself. All verbal exchanges were recorded with a handheld camera, yielding approximately ten hours of footage, supplemented by field notes that captured non-verbal behaviours and contextual information. In addition, the participant's Theory of Mind (ToM) ability was assessed using the Sally-Anne false-belief test (Baron-Cohen et al., 1985), a standard instrument in neuropragmatic and clinical research (Bischetti et al., 2024; Hadiyani et al., 2024). The test was administered individually in a quiet room, following the original narrative and question protocol.

All recordings were orthographically transcribed, and telegraphic speech – defined as utterances consisting mainly of content words with omission of function words – was identified using Brown's criteria (1973), as later applied to ASD populations (Eigsti et al., 2007; Nneka, 2012). From the transcribed corpus, every utterance that functioned as a directive (i.e., an attempt to get the hearer to do something) was extracted and classified according to Ervin-Tripp's six categories (1976). To ensure reliability, 20% of the data were independently coded by a second rater (a senior linguist), yielding an inter-rater agreement of 94%; disagreements were resolved through discussion.

Quantitative analysis consisted of calculating the frequency and percentage of each directive subtype. Qualitative analysis then interpreted these patterns through a neuropragmatic lens, drawing on evidence about brain regions implicated in pragmatic processing – notably the medial prefrontal cortex and temporoparietal junction for ToM, and the left inferior frontal gyrus for syntactic complexity (Van Overwalle et al., 2019; Wilson et al., 2021). The participant's ToM test outcome (pass/fail) was correlated with his directive production profile to assess whether deficits in mental state attribution aligned with the observed over-reliance on imperatives and telegraphic forms. This triangulation of observational, linguistic, and neurocognitive data follows current recommendations for neuropragmatic case studies (Bambini, 2012; Bischetti et al., 2024).

3. Result and Discussion

3.1. Result

This section presents the findings from the analysis of 140 directive utterances produced by the adolescent with ASD during nine days of participant observation. The utterances were classified according to Ervin-Tripp's taxonomy (1976), which distinguishes six structural variations: need statements, imperatives, embedded imperatives, permission directives, question directives, and hints. Inter-rater reliability was established by having a second rater independently code 20% of the data, yielding 94% agreement; disagreements were resolved through discussion. The results are organised as follows: first, the overall distribution of directive types is presented in tabular form; second, qualitative features of imperatives are described; third, the participant's use of telegraphic speech in question directives and hints is examined; fourth, the outcome of the Theory of Mind (Sally-Anne) test is reported; and finally, a summary of the key findings is provided.

3.1.1. Distribution of Directive Speech Acts

Before examining specific subtypes in detail, it is useful to consider the overall distribution as a reflection of the participant's communicative style. Table 1 below shows the frequency and percentage of each directive type. The predominance of imperatives (50%) suggests a strong preference for direct, unadorned directives – utterances that simply name the desired action or object without mitigating elements such as modals or politeness markers. The complete absence of embedded imperatives is also noteworthy, as this subtype is commonly used by typically developing speakers to soften requests, especially when addressing someone of higher status or age. Table 1 summarises the frequency and percentage of each subtype.

Table 1. Distribution of Directive Speech Acts Produced by the Participant

DIRECTIVE TYPE	FREQUENCY	PERCENTAGE	EXAMPLE (INDONESIAN)	INTENDED MEANING
Need Statement	2	1.43%	"Aku minta ini, mau ini, good time."	"I want this, ask for this."
Imperative	70	50.00%	"Pena!"	"Pen!" (i.e., "Give me the pen")
Embedded Imperative	0	0%	–	–
Permission Directive	19	13.57%	"Coba lihat."	"Let me see it, please."
Question Directive	26	18.57%	"Kartunya?"	"The cards?" (i.e., "Give me the cards")
Hint	23	16.43%	"Penanya tumpul."	"The pen is dull." (i.e., "Give me a sharper pen")
TOTAL	140	100%		

As shown in Table 1, imperatives were by far the most frequent type, accounting for exactly half of all directives (50%). Question directives ranked second (18.57%), followed by hints (16.43%) and permission directives (13.57%). Need statements were extremely rare (1.43%). The absence of embedded imperatives is consistent with the participant's overall tendency toward syntactically simple utterances. In the following subsections, each directive type is examined in greater detail, with attention to the participant's use of telegraphic speech and his performance on a Theory of Mind assessment. This distribution not only reflects a preference for imperatives but also raises questions about how these forms are functionally deployed across interactional contexts, which is explored in the following section.

3.1.2. Qualitative Features of Imperatives

The 70 imperative utterances varied in form and illocutionary force. They included elliptical imperatives (single nouns or verbs, e.g., *"Pena!"*), full verb phrases (e.g., *"Cari susunan"* – "Find the pattern"), imperatives with the tag *ya* (e.g., *"Jangan nangis, ya!"* – "Don't cry, okay!"), and imperatives with the attention-getter *aja* (e.g., *"Diacak aja dulu"* – "Just spread them randomly first"). The participant used imperatives regardless of the listener's social status: he addressed the researcher (an adult stranger)

with *"Cari susunan"*, his peers with *"Ibnu! Belajar dulu Ibnu, supaya dapat mobil"* ("Ibnu! You should study first so you can get a car"), and his junior with similar direct forms. No systematic adjustment for politeness or social distance was observed.

The data show that while the participant produced a range of imperative forms, including elliptical constructions, full verb phrases, and forms marked with particles such as *ya* and *aja*, this formal variation did not correspond to functional variation. All forms were consistently used as direct, unmitigated directives. Notably, the participant employed imperatives across different interlocutors, including an adult researcher, peers, and a younger student, without observable adjustment for social status or distance. This indicates a lack of context-sensitive modulation in directive production, where linguistic choices appear to be governed by a single dominant strategy rather than socially differentiated usage.

Interestingly, the presence of particles such as *ya* and *aja*, which in Indonesian can function as pragmatic softeners or markers of interpersonal alignment, did not systematically reduce the illocutionary force of the utterances. Their use was not conditioned by the relationship between speaker and listener, suggesting that these forms were produced without full sensitivity to their pragmatic functions. In other words, the participant demonstrated access to a range of structural resources, but these resources were not flexibly deployed in accordance with contextual demands.

This pattern is consistent with broader findings in autism research, which indicate that individuals with Autism Spectrum Disorder (ASD) may exhibit variability in structural language production while showing limited flexibility in pragmatic use. Structural aspects of language, such as syntax and lexical selection, are often relatively preserved or variably developed, whereas pragmatic competence, particularly the ability to adapt language to different social contexts, remains significantly constrained (Reindal et al., 2023; Volden, Coolican, Garon, White, & Bryson, 2009). In particular, previous studies have shown that individuals with ASD may produce grammatically varied utterances but struggle to adjust their communicative strategies based on interlocutor, setting, or interactional goals (Dosi & Boni, 2023; Yang, Gu, & Feng, 2022). Furthermore, the lack of systematic variation across interlocutors in the present data reflects a broader difficulty in adapting language to social context, which has been widely documented as a core feature of pragmatic impairment in ASD. While typically developing speakers modulate directive forms to reflect politeness, hierarchy, and interpersonal distance, individuals with ASD often rely on more stable, context-independent patterns of expression (Papaleontiou-Louca & Gena, 2023; Volden et al., 2009). Thus, the participant's imperative production can be understood not merely as a preference for directness, but as an instance of limited pragmatic flexibility despite the availability of diverse structural forms.

3.1.3. Telegraphic Speech in Question Directives and Hints

A substantial proportion of the participant's question directives and hints exhibited telegraphic speech – utterances reduced to essential content words with omission of function words and sometimes even key content words. For example:

> *"Kartunya?"* (literally "The cards?") was used to mean "Give me the cards."
> *"Apa harimau Sumatra?"* (literally "What is Sumatran tiger?") was intended as "Tell me the English name for Sumatran tiger."
> *"Kok kotak pensil buruk?"* ("Why is the pencil case old?") was meant as "Replace this old pencil case with a new one."

In each case, the intended directive meaning was not transparent from the literal wording alone. The listener had to infer the missing information from the immediate context (e.g., the presence of cards on the table, a previously discussed translation task). When the context was insufficient, misunderstandings occurred.

A substantial proportion of the participant's question directives and hints exhibited telegraphic speech, characterised by the omission of function words and, in some cases, essential lexical items. For example, "Kartunya?" (literally "The cards?") was used to mean "Give me the cards," "Apa harimau Sumatra?" ("What is Sumatran tiger?") functioned as "Tell me the English name for Sumatran tiger," and "Kok kotak pensil buruk?" ("Why is the pencil case old?") was intended as "Replace this old pencil case with a new one." In these cases, the intended directive meaning was not explicitly encoded in the linguistic form but had to be inferred from the immediate context.

This pattern indicates that the participant relied heavily on context-dependent communication, where

meaning is distributed across the interaction rather than fully realised linguistically. As a result, the listener bears a substantial inferential burden in reconstructing the intended meaning. When contextual cues are insufficient, this strategy leads to ambiguity and communicative breakdown, suggesting that the participant's utterances lack pragmatic transparency.

From a developmental perspective, telegraphic speech is typically observed in early language acquisition, where children prioritise content words and omit grammatical elements (Brown, 1973). However, in ASD, such patterns may persist beyond early childhood and are often associated with broader challenges in language development. For instance, exposure to telegraphic input has been shown to negatively affect lexical diversity in children with ASD, indicating that reduced grammatical structure may constrain language growth rather than facilitate it (Venker et al., 2015). It suggests that telegraphic production is not merely a neutral simplification strategy, but one that may have long-term implications for linguistic and communicative competence.

In addition, the participant's use of reduced interrogative forms aligns with findings that question production—particularly wh-questions—is relatively limited in individuals with ASD due to combined grammatical and pragmatic constraints (Goodwin, Fein, & Naigles, 2012). Rather than producing fully formed interrogatives, the participant relied on truncated forms that blur the boundary between questions and directives. This supports previous observations that individuals with ASD tend to rely on simpler, more direct speech acts, such as imperatives and basic interrogatives, as part of their communicative repertoire (La Valle et al., 2020; Prasetyoningsih et al., 2020).

Furthermore, the use of hints in telegraphic form introduces an additional layer of complexity. Hints, by definition, require the listener to infer indirect meaning, often supported by prosody, gesture, or shared contextual knowledge. However, individuals with ASD are known to exhibit limitations in these supporting modalities, including reduced use of co-speech gestures and atypical prosodic patterns (Grice et al., 2023). In the present data, the absence of explicit linguistic encoding combined with limited paralinguistic support may further hinder the interpretability of such utterances.

Thus, telegraphic speech in the participant's question directives and hints can be understood as a strategy that reduces linguistic complexity but increases reliance on contextual and inferential processing. While this may allow for efficient communication in highly structured or familiar contexts, it also creates a high risk of misunderstanding in less predictable interactions. Importantly, this pattern reflects not only structural simplification but also a broader limitation in aligning linguistic form with communicative intent.

3.1.4. Theory of Mind Test Outcome

The heavy reliance on contextual inference observed in telegraphic speech raises an important question: to what extent is the participant able to represent the listener's perspective? To address this, a Theory of Mind assessment was conducted. The participant was administered the Sally–Anne false belief task, a widely used measure of first-order Theory of Mind (ToM) (Baron-Cohen et al., 1985). He successfully answered the control questions, correctly identifying the characters and recalling the initial placement of the marble. However, when asked the critical question—"Where will Sally look for her marble?"—he indicated the box, which reflected the marble's actual location after it had been moved by Anne, rather than the basket where Sally had originally placed it. This response demonstrates a failure to attribute a false belief to another, indicating a deficit in first-order ToM.

This finding is consistent with a substantial body of research showing that individuals with Autism Spectrum Disorder (ASD) often experience difficulty in false belief reasoning, particularly in tasks requiring the attribution of mental states that differ from reality (Baron-Cohen et al., 1985; Papaleontiou-Louca & Gena, 2023). Such limitations in ToM have been widely associated with challenges in social communication, including difficulties in anticipating others' knowledge, intentions, and perspectives.

When interpreted in relation to the participant's directive production, the ToM deficit provides an important explanatory context. The predominance of direct imperatives, the absence of embedded (politeness-marked) directives, and the frequent use of telegraphic speech all point to a communicative system that does not systematically take the listener's perspective into account. For instance, producing a polite or indirect directive typically requires the speaker to consider the listener's potential willingness, social status, or need for autonomy—processes that rely on the ability to attribute mental states. Similarly, the use of telegraphic utterances that omit critical information assumes that the listener can infer the intended

meaning from context, which also presupposes sensitivity to shared knowledge and perspective.

The convergence of these findings suggests that the participant's linguistic behaviour is not random but systematically related to limitations in social-cognitive processing. In other words, the reduced pragmatic flexibility observed in earlier sections can be interpreted as reflecting constraints in perspective-taking rather than mere stylistic preference. This interpretation is further supported by research indicating that ToM abilities are closely linked to pragmatic language use, particularly in contexts requiring indirectness, inference, and audience design (Papaleontiou-Louca & Gena, 2023; Volden et al., 2009). Moreover, the overall profile observed in this study, characterised by reliance on imperatives, telegraphic speech, and failure in false belief reasoning, closely resembles patterns found in typically developing children between the ages of 2 and 6 years. At this developmental stage, children are still acquiring both grammatical complexity and ToM, and therefore tend to rely on direct, context-dependent forms of communication (Baron-Cohen et al., 1985; Brown, 1973). Thus, the participant's performance may be more accurately described as reflecting a delayed developmental trajectory in pragmatic and social-cognitive domains rather than a qualitatively deviant pattern.

3.1.5. The Dominance of Imperatives: Simplicity or Rudeness?

The finding that imperatives constituted 50% of all directives is consistent with previous research on pragmatic production in ASD. Prasetyoningsih et al. (2020) reported that Indonesian autistic children predominantly used direct literal speech act strategies, with imperatives and simple interrogatives being the most common forms. Similarly, Hadiyani et al. (2024) observed that a young adult with ASD responded to questions with one- or two-word utterances, often omitting essential information. In the present study, the participant's over-reliance on imperatives was not limited to peers or juniors; he used the same direct forms even when addressing the researcher – an adult stranger. From a purely behavioural standpoint, this could be misinterpreted as rudeness or a lack of social awareness.

However, this interpretation is overly simplistic. A neuropragmatic perspective suggests that the dominance of imperatives reflects underlying cognitive and linguistic constraints rather than intentional impoliteness. The production of polite or indirect directives—such as embedded imperatives (e.g., "Could you please…?")—requires at least two interrelated capacities: first, the ability to construct syntactically complex utterances, and second, the ability to model the listener's mental state, including their willingness, perspective, and social position (Bischetti et al., 2024; Van Overwalle et al., 2019). Both capacities are known to be variably impaired in individuals with ASD.

Neurolinguistic research provides further support for this account. Studies have shown that individuals with ASD may exhibit reduced activation in brain regions associated with syntactic processing, particularly the left inferior frontal gyrus, as well as in regions implicated in mental state attribution, such as the medial prefrontal cortex and temporoparietal junction (Eigsti et al., 2007; Wilson et al., 2021). These neural constraints can limit both the structural complexity of utterances and the ability to adapt language based on the listener's perspective. In this context, imperatives—especially in their reduced or telegraphic forms—represent a cognitively economical strategy that allows the speaker to convey intent without engaging in complex syntactic construction or perspective-taking.

Importantly, the participant's failure in the Sally–Anne false belief task provides behavioural evidence supporting this neurocognitive interpretation. The inability to attribute false beliefs suggests limitations in Theory of Mind, which is crucial for producing socially appropriate and context-sensitive directives. Moreover, the complete absence of embedded imperatives across all 140 utterances reinforces the interpretation that syntactic complexity is constrained. Taken together, these findings indicate that the participant's reliance on imperatives is not a matter of communicative choice, but a systematic reflection of his neurocognitive profile. Thus, rather than framing the participant's directive style as rude or socially inappropriate, it is more accurate to interpret it as a form of constrained efficiency, an adaptation to limitations in both syntactic processing and social cognition. This perspective shifts the focus from behavioural judgment to cognitive explanation, highlighting the importance of understanding pragmatic patterns in ASD within a neurodevelopmental framework.

3.1.6. The Absence of Embedded Imperative

The participant never produced an embedded imperative (e.g., *"Can you…?"* or *"Could you please…?"*) across all 140 directive utterances. This is striking because embedded imperatives are the prototypical polite request form in both Indonesian and English (Ervin-Tripp, 1976; Sneddon, Adelaar, Djenar, & Ewing, 2010). In typical language development, such forms begin to emerge around the ages of 4–5, alongside increasing syntactic complexity and the development of social-cognitive awareness. Their complete absence in the present data therefore represents not merely a quantitative reduction, but a qualitative gap in the participant's directive repertoire.

From a structural perspective, embedded imperatives require the integration of more complex syntactic constructions, including modal verbs and clause embedding. Previous research has shown that individuals with ASD tend to produce less syntactically complex utterances compared to typically developing peers, even when vocabulary size is controlled (Eigsti et al., 2007; Reindal et al., 2023). This aligns with earlier findings in this study showing a reliance on simplified and telegraphic forms, suggesting a broader pattern of structural constraint.

However, the significance of this finding extends beyond syntax. Embedded imperatives also encode sensitivity to the listener's autonomy, willingness, and social position. Producing such forms requires the ability to represent the listener's mental state, a capacity closely linked to Theory of Mind. As discussed in Section 3.4, the participant's failure in the false belief task indicates limitations in perspective-taking. This is consistent with previous studies demonstrating that pragmatic language use in ASD, particularly in contexts requiring indirectness and audience design, is strongly associated with ToM abilities (Papaleontiou-Louca & Gena, 2023; Volden et al., 2009).

Furthermore, the absence of embedded imperatives parallels earlier observations in this study regarding limited pragmatic flexibility and reliance on context-dependent interpretation (Dosi & Boni, 2023; Yang et al., 2022). Without the ability to anticipate the listener's perspective or negotiate interpersonal meaning, there is little functional basis for selecting indirect or mitigated directive forms. Thus, the absence of embedded imperatives should be understood not as an isolated omission, but as a systematic reflection of interacting structural and pragmatic constraints.

3.1.7. Telegraphic Speech as a Compensatory Strategy

Telegraphic speech – utterances reduced to content words – is a normal phase in early language acquisition (Brown, 1973; Nneka, 2012). In typically developing children, it gradually disappears as grammatical and pragmatic competence increase. In the present participant, however, telegraphic forms persisted into adolescence. He produced utterances such as *"Kartunya?"* for "Give me the cards" and *"Apa harimau Sumatra?"* for "Tell me the English name for Sumatran tiger." These utterances omit auxiliary verbs, prepositions, and sometimes the main verb, leaving the listener to infer the intended directive from context.

From a neuropragmatic perspective, telegraphic speech can be viewed as a compensatory strategy to cope with limited syntactic processing resources. By omitting non-essential words, the participant reduces the cognitive load on his left inferior frontal gyrus, allowing him to focus on conveying the core content (Wilson et al., 2021). However, this strategy is not always successful. When the context is insufficiently rich, the listener may fail to grasp the intended meaning – as occurred when the participant asked *"Apa harimau Sumatra?"* without prior mention of an English translation task. The resulting confusion illustrates the trade-off: telegraphic speech enables communication in some situations but risks ambiguity in others (Reindal et al., 2023; Yang et al., 2022). Thus, telegraphic speech should not be viewed solely as a deficit in grammatical competence, but as an adaptive response to underlying constraints in both syntactic processing and pragmatic encoding. This interpretation aligns with earlier findings in this study, suggesting that the participant's communicative system prioritises efficiency over explicitness.

3.1.8. Comparison with Early Typical Development

The overall profile of the participant's directive production, characterised by a high reliance on imperatives, persistent telegraphic speech, absence of embedded imperatives, and failure in false belief reasoning, closely resembles the communicative patterns observed in typically developing children between the ages of 2 and 6 years. At this stage, children rely heavily on direct, context-dependent forms of communication due to still-developing grammatical and pragmatic systems (Brown, 1973; Nneka, 2012).

Similarly, their Theory of Mind abilities are not yet fully established; false belief understanding typically emerges around the age of four (Baron-Cohen et al., 1985).

This comparison reinforces earlier findings in this study that highlight the interaction between structural simplification, pragmatic limitation, and reduced perspective-taking. As shown in Sections 3.2–3.7, the participant demonstrates patterns that are developmentally typical in form but atypical in persistence. This aligns with research suggesting that individuals with ASD may exhibit delayed rather than qualitatively different trajectories in language and pragmatic development (Reindal et al., 2023; Volden et al., 2009).

Moreover, the participant's reliance on direct directives and telegraphic forms parallels findings that individuals with ASD tend to favour simpler speech acts and show limited flexibility across contexts (Dosi & Boni, 2023; Prasetyoningsih et al., 2020). The absence of embedded imperatives further supports this interpretation, indicating that more advanced pragmatic strategies, such as indirectness and politeness, have not been fully acquired. From this perspective, the participant's communicative profile is best understood as reflecting a developmental delay in the integration of structural, pragmatic, and cognitive capacities. Importantly, this interpretation challenges deficit-based labels such as "rude" or "non-compliant," which overlook the underlying neurocognitive constraints shaping language use.

This has important implications for inclusive education. Interventions should focus not only on correcting observable behaviour but also on supporting the development of more complex linguistic and pragmatic skills. This includes modelling embedded directive forms and explicitly teaching the relationship between language use and the listener's mental state. Evidence suggests that approaches integrating structural and pragmatic scaffolding are more effective in supporting communication in individuals with ASD (Bischetti et al., 2024; Minsih et al., 2025; Yang et al., 2022).

4. Conclusion

This neuropragmatic case study examined the production of directive speech acts in a 15-year-old adolescent with Autism Spectrum Disorder (ASD) in an inclusive classroom. Addressing the research questions, the findings show that imperatives are the dominant directive type (50%), while embedded imperatives are entirely absent, and directive production is consistently realised through telegraphic speech. The participant's failure on the Sally–Anne task further indicates a deficit in first-order Theory of Mind (ToM). These patterns demonstrate that directive production is shaped by structural simplification, limited pragmatic flexibility, and reduced perspective-taking.

From a neuropragmatic perspective, these features reflect neurocognitive constraints rather than intentional rudeness. The reliance on imperatives and telegraphic forms functions as a compensatory strategy that reduces syntactic and cognitive demands, but increases ambiguity and dependence on context. The overall profile closely resembles that of typically developing children aged 2–6 years, suggesting a delayed rather than qualitatively deviant developmental trajectory.

This study contributes to neuropragmatics by showing how directive production in ASD emerges from the interaction between syntax, pragmatics, and ToM, and by providing empirical evidence from an Indonesian inclusive classroom context, which remains underrepresented in the literature. It also highlights the need for pedagogical approaches that scaffold pragmatic and perspective-taking skills, rather than relying solely on behavioural correction.

However, this study is limited by its single-case design, short observation period, and the use of a single ToM measure, as well as the absence of direct neuroimaging evidence. Future research should involve larger samples, longer observations, more comprehensive ToM assessments, and, where possible, neuroimaging methods, as well as cross-linguistic and intervention-based studies to further validate and extend these findings.

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