

## PHONOLOGICAL FEATURES IN NSUKKA-IGBO CHILD-DIRECTED SPEECH

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### Abstract

This study examines the phonological features of Nsukka-Igbo Child-Directed Speech (CDS), to identify the specific phonological markers that characterise CDS and explore other communicative strategies employed in caregiver–child interaction. As a descriptive research, data were elicited from four native speakers of Nsukka-Igbo through oral storytelling of folktale narratives, a culturally embedded communicative practice. The analysis highlights distinctive phonological strategies such as exaggerated high pitch, vowel lengthening, repetition, and the extensive use of ideophones. These features, which are consistently more prominent in CDS than in Adult-Directed Speech (ADS), serve multiple functions: capturing and sustaining children’s attention, reinforcing lexical tone distinctions crucial in a tonal language, and dramatising narratives to foster emotional engagement. Additionally, caregivers employed simplified vocabulary, questioning, and multimodal cues such as gestures and facial expressions to scaffold comprehension and participation. The findings align with cross-linguistic studies on CDS, while also emphasising language-specific adaptations in Igbo, particularly the integration of tonal exaggeration with cultural storytelling practices. This study contributes to a broader understanding of CDS in tone languages and provides valuable insights for child language acquisition research and Igbo dialectal studies, and language documentation.

**Keywords:** *Child-Directed Speech, Nsukka-Igbo, Adult-Directed Speech, Phonological features, Language acquisition.*

### Introduction

Human communication, fundamental to social cohesion and cognitive development, relies on various modalities, including speech, which plays a crucial role in language acquisition. Particularly important in early childhood is Infant-Directed Speech (CDS), a specialised register adults use when addressing infants. CDS is distinguished from Adult-Directed Speech (ADS) by its exaggerated pitch, slower tempo, clearer articulation, and simplified syntax (Gelderloos, Chrupala & Alishahi, 2020; Li, 2022; Ko, 2012). These features are thought to enhance linguistic salience and emotional bonding, serving both developmental and affective functions (Wass *et al.*, 2022; ManyBabies Consortium, 2020). CDS has been empirically shown to support language development by facilitating phonetic discrimination, word segmentation, and emotional engagement in infants and children (Fernald & Simon, 1984; Hernandez, Carmichael & Dunsmore, 2021). For example, infants exhibit a clear preference for CDS over ADS, suggesting its acoustic properties are evolutionarily tuned to infant perception (Broesch & Bryant, 2015). Further, CDS’s phonological features, such as hyperarticulation, higher pitch, and slowed rhythm, are critical in

helping infants recognise and learn the sound structure of their native language (Kangatharan, 2015; Gervain & Werker, 2008).

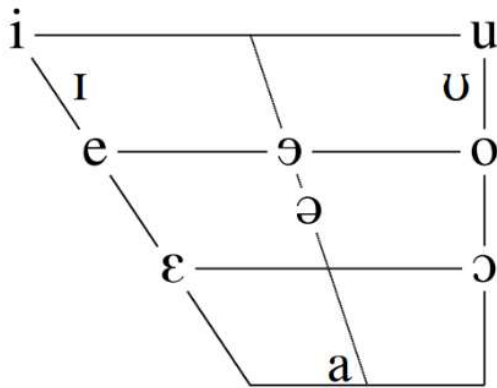
The theoretical foundation for CDS research is grounded in the Prosodic Bootstrapping Hypothesis, which posits that infants use prosodic cues such as pitch and rhythm to parse speech and acquire syntactic structures (Jusczyk & Krumhansl, 1993). Complementary theories like the Attention and Arousal Hypothesis highlight the cognitive benefits of CDS, asserting that its exaggerated prosody enhances infant attention, which in turn facilitates linguistic processing (Fernald, 1992; Thiessen, Hill & Saffran, 2005). Despite this extensive body of research, much of it has focused on Indo-European languages, with comparatively little attention paid to African languages, particularly tone languages like Igbo, where phonological elements such as pitch and vowel quality are lexically contrastive. This oversight is significant, given that phonological features (e.g., tone, vowel harmony, prosody) are crucial for conveying meaning in tonal languages (Goswami, 2020). Moreover, as CDS influences how these phonological cues are perceived and acquired, it becomes essential to examine how CDS manifests in such linguistic contexts.

This study focuses on Igbo (ISO 639-3), a major Niger Congo language, spoken mostly in South-Eastern Nigeria. Igbo is known for its tonal complexity and simple syllable structure, making it a compelling case for examining how CDS is involved in phonological acquisition. Within Igbo, the Nsukka dialect offers additional interest due to its historical contact with other languages and resulting phonological and lexical distinctiveness (Nwoye, 2019; Emenanjo, 2015). Nsukka-Igbo retains the core features of standard Igbo while also exhibiting unique tonal patterns and segmental variations, particularly in vowel harmony and consonantal realisation. The dialect's rich oral tradition, especially folktales and storytelling, also provides a culturally embedded context for observing CDS.

Although the phonological features of CDS have been documented cross-linguistically, there is a clear gap in phonological studies on CDS within Nigerian and broader African linguistic contexts. Existing research has explored acoustic features in CDS and its developmental significance in Western languages (Kalashnikova & Burnham, 2018; Dilley et al., 2020), but little is known about how these features interact with the distinctive phonological systems of tone languages like Igbo or how ADS influences the shape and function of CDS in such settings. Specifically, no known study has comprehensively documented how segmental and suprasegmental features of CDS in Nsukka-Igbo compare with those in ADS, or how these features support early language acquisition within the cultural context of storytelling. This study addresses that gap by exploring how segmental and suprasegmental phonological features in Nsukka-Igbo CDS differ from those in ADS, and how they function in child-directed communicative contexts. This study fills in this gap and pursues the following objectives. It identifies the phonological features that characterise CDS in Nsukka-Igbo. Additionally, it examines how other communicative elements are employed by adults to facilitate language acquisition in Nsukka-Igbo children. Our focus on this specific dialectal variety within a tone language anchors the study in both linguistic theory and cultural practice. This research contributes to a more inclusive and typologically diverse understanding of CDS. Additionally, it has practical implications for developing educational tools and language preservation strategies for under-documented Igbo varieties and Nigerian languages.

### **Brief Overview of Nsukka-Igbo Phonology**

The study of Igbo dialects has received some measure of phonological attention from various scholars (see Williamson, 1972, 2016, Ikekeonwu, 1987; Uguru, 2014, 2015; Obianika *et al.*, 2021; Nwaozuzu, 2017; Akinbo, 2024). Despite the extensive progress made in the studies of Igbo dialects, very scanty literature exists on the study of the phonology of Nsukka Igbo (one of the clusters of dialects spoken in the Northern parts of Igboland, specifically Nsukka Urban Local Government Area of Enugu State, Nigeria). The dialect has been reported to exhibit some intriguing patterns of speech sounds which are not represented in Standard Igbo but are yet phonemic. The most interesting of these sounds are the vowels; Ikekeonwu (1987) and Nkamigbo (2010) report that in Waawa Igbo, also known as Northern Group of dialects (which Nsukka belongs to), there exists a vowel system, we report an eleven-vowel system with /e/, /ɛ/, /ə/ and /ə/ interacting in unique contexts, which is worthy of future studies. The schwa vowels- /ə/ and /ə/ refer to the [-ATR] and [+ATR] central vowels that are observed in this variety, which are not only spoken by speakers but also used in writing to differentiate them from /ɛ/ and /e/. Below is the vowel chart that shows the eleven vowels that are observed in the Nsukka variety of Igbo.



**Figure 1:** Vowel inventory of the Nsukka-Igbo variety

Apart from the vowels, there are consonant phonemes that are distinct and worth noting. Some examples, according to Nkamigbo (2010)- /s<sup>w</sup> ʃ<sup>w</sup> h<sup>w</sup> b<sup>j</sup> p<sup>f</sup>, tʃ<sup>w</sup> l<sup>w</sup> r<sup>w</sup>/ and Nwaozuzu (2017), /tʃ dv dz ts pʃ ɸ<sup>w</sup> ʎ<sup>w</sup> ʎ<sup>w</sup> ʎ<sup>i</sup>/. However, Nwaozuzu's observation is drawn from the Northern Group of varieties and not only from Nsukka-Igbo. We represent the sounds of Nsukka-Igbo in the chart below.

	Bilabials	Palatalized-Labials	Labiodental	Alveolar dental	Alveolar	Post-alveolar	Labialized-post alveolar	Palatal	Velar	Labiovelar	Labialized-velar	Glottal
<b>Plosive</b>	p b	pʲ bʲ			t d				k g	kp gb	kʷ gʷ	
<b>Fricatives</b>			f v		s z	ʃ ʒ	ʃʷ		ɣ			ɦ
<b>Affricates</b>						tʃ dʒ						
<b>Nasals</b>	m	mʲ		n				ɲ	ŋ		ŋʷ	
<b>Rolls</b>				r								
<b>Laterals</b>				l								
<b>Approximants</b>								j (ʌ)		w		

**Figure 2:** Consonantal inventory of the Nsukka-Igbo variety

Nsukka-Igbo shares the Canonical Igbo Syllable structure, which is primarily (C)V or syllabic N, with codas and consonant clusters disallowed. However, glides like /j w/ can occur in some contexts. For tones, Nsukka-Igbo, just like Standard Igbo, contrastively uses three-level tones – High, Low, and the downstepped tone [!H], which is a high tone that is reduced in pitch, but not exactly perceived as a mid-tone. The downstep tone, as Emeh and Ubah (2014:10) claim, “cannot begin a canonical word and is acoustically regarded as dropping from a height, is perceived as such, and cannot be preceded by a low tone; it can only follow a high tone or another downstep tone.” Nsukka-Igbo also uses tones in grammatical contexts to differentiate question forms from declarative sentences, to differentiate cardinal from ordinal numbers and to differentiate possessive forms from associative constructions (Refer to literature for details on this). Intonation is another suprasegmental feature that plays a huge role in speech. Uguru (2014, 2015) has argued that tone interacts very significantly with intonation in representing specific meanings in speech, which is foundational to the thesis of this paper, as it pertains to a variety of the Igbo language. While discussing tone and intonation in detail is not the focus of this paper, we note this here because tone and intonation interact to produce the variations observed in the CDS data of this paper.

## Methodology

This study employs a descriptive research design to investigate the phonological features of Child-Directed Speech (CDS) in comparison to Adult-Directed Speech (ADS) in Nsukka Igbo. The area of study is Nsukka, located in Enugu State, Nigeria. Nsukka is not only linguistically significant as a distinct dialect zone of Igbo, but it also retains rich oral traditions that provide a natural context for examining IDS, especially through folktales and storytelling practices that involve child-audience participation. According to recent census data, the population of Nsukka Local Government Area was estimated to be about 309,448 people at the 2006 census (City Population, 2022). However, the number has been growing steadily due to the presence of educational institutions like the University of Nigeria, Nsukka, which draws students, faculty and support staff

from different parts of the country. The Nsukka variety of Igbo is predominantly spoken in Nsukka and belongs to the Northern Igbo dialect cluster, under the Igboid, Niger-Congo language family. The northern Igbo dialect cluster shares linguistic features with dialects from neighbouring areas but maintains distinct phonological and lexical characteristics (Nweze, Ugwuona & Egenti, n.d). This group of dialects is distinguished by its tonal variations and unique pronunciation patterns, especially in comparison to central and southern Igbo dialects (Ifyede, 2020).

Participants included 16 parent-children dyads from Nsukka, Enugu State, Nigeria. Three parents had two children, and the other parent had more than four (4) children. The parents consisted of 3 females and 1 male aged between 25 and 42 years. The participants (parents) interacted with children of various ages, ranging from 3 to 8 years old. For data collection, each participant was instructed to do narrative sessions, which included storytelling which have in morals and ethics and stories relating to myths still existing in the Nsukka-Igbo culture. The narrative type was necessary to allow for an interactive section. Since the participants had to interact naturally using the Nsukka-Igbo, their method of communication and interaction was also observed and included in the analysis. The participants were first made to tell the story to the children participants, which set the CDS context. In contrast, the ADS data were collected from the same speakers addressing adult listeners in similar narrative contexts. The speech data were recorded using the Shure SM35-XLR Headset Condenser Microphone attached to a Zoom Q8 recorder. Since we are interested in the speech of the adult participants directed to the children, we focused primarily on the adult participants during the CDS context recording, while using the ADS recording context as the normative baseline for comparisons. Again, the video camera was focused to capture mostly the facial expressions and gestures of the adult participants, since we believed that it adds context to CDS. Adult participants signed consent forms, choosing to voluntarily participate in this research.

### **Data Analysis**

We present the phonological features observed in the CDS as the adult participants communicated with the children. The International Phonetic Alphabet (IPA) is used here, in presenting the data, and not the orthography. Tone is also marked in all cases, as used in connected speech and not as it is pronounced in isolation, on individual words; hence [ ´ ] is used to mark high tones, [ ` ] for low tones and though the symbol [!] is for downstepped high, but in this paper, we leave it unmarked. Furthermore, the rising, falling, rise-fall, increased rising and flat pitch contours are signalled with the following symbols [↗], [↘] [↗↘], [↗↗] and [—] respectively, while P1, P2, P3 and P4 refer to participants.

#### **1. The Use of Pitch**

The adult participants were observed to use pitch in different ways to convey emotions and grab the attention of the children during the storytelling sessions. For instance, when explaining what specific things mean, or when the adult speaker believed that the children did not understand the meaning of a word. Pitch was used in different ways in different communicative contexts. However, within the same communicative context, CDS pitch and ADS pitch usually show some distinctions in the pitch level. Note that other non-verbal cues also played some key roles.

a. Pitch variation to show emotional bonding:

èlúú ↗ ↗ íyà ↗ ↘ (replies with children) èlúú ↗ ↗ íyà ↗ ↘ (replies with children) [CDS P1]

Words said at the introduction of the story, accompanied by a smiling face

Èlúú ↗ (pauses to allow adults reply) èlúú ↗ (pauses to allow adults reply) [ADS P1]

Words said at the introduction of the story, accompanied by a neutral face

ómóákā ↗, ómò m̄ oo ↗ ó ɲwèrè ákókó m̄ gá àkóró ↗ ùnù [CDS P4]

“Children, my children, there is a story I want to tell you (pl)”

ó nwèrè ákókó m̄ gá àkóró ùnú — [ADS P4]

“There is a story I want to tell you (pl)”

ò ɲwá m̄mwó kà m̄ ↗ kòró gə ↗ íníné [CDS P2]

“Little spirit, let me narrate something to you, inine (response to song)” (smiling)

ò ɲwá m̄mwó kà m̄ kòró gə — íníné ↘ [ADS P2]

“Little Spirit, let me narrate something to you, ini inee (sung, with no smile on the face)

órùrù nè ókófí, m̄rí kwósí íbja ↗ hmmm ↗ (pause to look at their faces) [CDS P3]

“It got to the dry season, and rain stopped falling”

órùgídé nà m̄bé òjá ↘ [ADS P3]

“It got to the dry season, and rain stopped falling”

óné já áló ɲwá ézè já èvútélí ya éjí ↘ éjí b́o elifantí ↗ yes elifant ↗ ↗ [CDS P1]

“The person who would marry the king's daughter must bring an elephant, it is called elephant, yes, elephant”

óné já áló ɲwá ézè ↘ já àtótádírí éjí — [ADS P1]

“The person who would marry the king's daughter must bring an elephant”

b. Pitch variation showing reaction to a situation or happenings

óné ɲwé dzí wèé bàtá sí ↗ heeeeeiiii ↗ ↗ [CDS P2]

“The owner of the yam came in and shouted heeeeeiiii”

óné ɲwé dzí wèé bja ↘ sí heeeeeii ↗ [ADS P2]

“The owner of the yam came in and shouted heeeeeiiii”

ómò ánómanò zòt̄fèrè ↘ hé kpùt̄jírì nà ágúgá ágúgá sí ↗ èhééé ↗ ↗ [CDS P3]

“The animals were hidden at a corner, looking and said Eh, hen”

ómò ánómanò wèé sí ↘ ókèéé ↗ [ADS P3]

“The animals then said Okay”

We see from these examples that in Nsukka-Igbo CDS, the adults often exaggerate their pitch, moving from low to high and even higher, creating a melodic and rhythmic intonation pattern. This rising pitch contour captures a child's attention, making speech more engaging and emotionally expressive. The modulation in pitch is not random; it functions to express warmth, excitement, encouragement, and sometimes reprimand, thereby facilitating emotional bonding and social interaction. Because pitch variation in Nsukka-Igbo is significant in distinguishing lexical meaning, the adults leverage that by exaggerating tonal contrasts further to make lexical distinctions clearer for the child. This reinforces that CDS in tonal languages serve the role of maintaining emotional connection and reinforcing correct tonal production for language acquisition. In other words, this heightened tonal clarity helps children internalise the tonal rules of the language more effectively. Thus, pitch in Nsukka-Igbo CDS not only mirrors the universal emotional strategies found in CDS but also functions pedagogically, teaching tone as a structural feature of the language.

## **2. The Use of Ideophones**

Ideophones are words that vividly imitate or describe sounds, actions or feelings (Dingemanse, 2018; Lee, 2017). They are often dramatic and bring experiences to life, such as the sound of things, animals, and more. Ideophones were also used during the CDS session by the parent to enable the children to understand vividly what the parent is talking about, or to liken it to something they can use to understand unknown concepts or things. More ideophones were used in the CDS than in the ADS.

ó dì óbére, ó dì ηwáríηwa	[CDS P2]
“It is small, it is small small (very small)”	
ó nà àdí ηwá dǵáá	[ADS P2]
“It is normally small”	

The ideophone *ηwáríηwa* is used to show how small things can be, that means, anything that is smaller than *óbére* ‘small’ is definitely, *ηwáríηwa* (very small).

ηwúnè mbè gánè ègwé íhé nà èhó jā tǵíkírí tǵíkírí tǵíkírí tǵíkírí	[CDS P1]
“Tortoise's wife was now grinding something on tortoise's stomach chikiri chikiri chikiri chikiri”	
ηwúnè mbè gánè ègwé íhé néélu mbè	[ADS P1]
“Tortoise's wife was grinding something on tortoise's stomach”	

Chikiri, chikiri, chikiri, chikiri is an ideophone used to describe the way and manner someone uses a stone to grind something, or the sound made by the grinding.

ò wèé ǵí né élu wèé dàà gbìimmm	[CDS P1]
“He then fell from heaven gbiimmm”	
ò wèé ǵí nélíígwé wèé dàà	[ADS P1]
“He then fell from heaven”	

The gravity of the fall was explained using an ideophone *gbiimmm* in CDS, but not so in ADS.

ó nà àlò né élu ójǐfí èmé tíngém tíngém tíngém [CDS P4]

“It stays on the tree, moving from one tree to another”

ójǐ néélú ósísí óḡwá ná òtígáva néélú ójǐfí óḡwa [ADS P4]

“It moves from one tree to another”

Tingem tingem tingem shows how the animal (squirrel) moves from one tree to another.

éni bùrù nnúkwú íbù, ì sí kà í dówá já nòólò òsí hóóóóóóóó (demonstrating) [CDS P3]

“Elephant is so huge, if you say to keep it in a house, when it makes a sound”

éni bùrù nnúkwú íbù kétéke [ADS P3]

“Elephant is so huge”

"Hooooooo" was used in IDS to show the loudness of an elephant's trumpet. Since adults already understand that elephant sounds are called trumpets and they know what they sound like, it wasn't necessary to account for it.

“éhó ja ékwéro ja ágáye órjá mmeee [CDS P4]

“Its stomach couldn't pass (through the door), so it shouted meehhhhh.”

éhó ja áhò vùrù àmáǐfí àmáǐfí gbákúrú, ò gá èkwégó áfò [ADS P4]

“Its stomach, which was so big, couldn't pass through the door”

“mehhhhh” is a sound mimicking the sound of a goat. Since the goat was struggling to get out, it had to bleat - meehhhhh. Children are more familiar with the sound since they can easily associate it with that of a goat.

ḡwúnè já rjàgìdè dàdàdàdàdà, nà òtíméré ja ìḡwè já dǒi èḡwé ífhe [CDS P3]

“His wife started complaining that he had broken the grinding stone she was using to grind”

ḡwúnè já sì nà òtirikpó kwénú je ífhe ódǒi èḡwé ífhe [ADS P3]

“His wife said he had broken the thing she was using to grind”

Ideophones are employed for better expression of a shape, action or activity since the children are more open to them than the term it is called in general.

### **3. The use of Vowel Lengthening**

Lengthened vowel is also another phonological feature used by caregivers to capture the attention of their children and enhance their language learning. It also makes the communication fun and engaging. Below are examples of sentences where vowel lengthening was used in Nsukka CDS, but not in ADS.

óné ḡwe dǒi wèè bjá dǒidé: é:wu: [CDS P4]

“The owner of the yam caught a goat”

óné ḡwe dǒi dǒidè éwú nu [ADS P4]

“The owner of the yam now caught a goat”



ó bjàgìdèrè nòòbòdò ómò ánóóma:nò:	[CDS P3]
“It happened in the animal kingdom”	
ó bjàgìdèrè nòòbòdò ómò ánómanò	[ADS P3]
“It happened in the animal kingdom”	
mè ópé ká álú ñwá ézè já évùté é:ni:	[CDS P2]
“And the person who marries the king's daughter must bring an elephant”	
mè ópé ká álú ñwá ézè já kà áputádirì éjí	[ADS P2]
“And the person who would marry the king's daughter must come along with an elephant”	
á nà émé ñmé mmé néélí:gwe:	[CDS P1]
“There was a feast in heaven”	
á nà émé ñmé mmé néélígwe	[ADS P1]
“There was a feast in heaven”	
órùrù ótùú ó:gbòfí ò dzé góté ò:dára	[CDS P1]
“One day, she went and bought an African star apple”	
órùrù ótù ógbòfí ò dzé góté òdára	[ADS P1]
“One day, she went and bought an African star apple”	
òsà wèè dèrò ñkè já màkà nà ó màrà àrí néélu ó:fíí tère ó:gólógó:	[CDS P3]
“Squirrel followed its own (mother) since it could climb a very tall tree”.	
òsà dèrò màrà ja nìdé néélū ófíí	[ADS P3]
“Squirrel followed its mother and kept her on top of a tree”	
òdàrà áhò ámitfá:	[CDS P4]
“That African star apple became very juicy/succulent”	
òdàrà áhò wjá ámitfá	[ADS P4]
“That African star apple became very juicy/succulent”	
òdàrà já wèè tífátfátfá: wèè bù:ó:	[CDS P2]
“The African star apple became ripe and very big”	
òdàrà wèè tífátfátfá	[ADS P2]
“The African star apple became ripe”	

### **Communicative Elements Employed to Aid CDS in Nsukka-Igbo**

CDS goes beyond the use of verbal communication to include other elements simplified vocabulary, facial expressions, repetition, and frequent questioning, to reiterate or reinforce learning. Such elements serve both social and instructional functions, allowing children to attend to speech, recognise linguistic patterns, and begin to form responses. In Igbo culture, where orality and communal interaction are central to learning, these strategies are naturally integrated into caregiver-child communication. The use of gestures, culturally familiar expressions, and melodic intonation helps sustain the child's interest while reinforcing language structures and culturally relevant meanings. This was observed in Nsukka-Igbo CDS as seen in the examples that follow.

- **The use of repetition**

Unlike in ADS, Nsukka-Igbo CDS is very rich in repetition. The adults made use of it to highlight or emphasise certain explanations, to show intensity or frequency of what is being said. This also creates a kind of rhythm.

mbè tātātātā ò dzé tǹékú òṅwé nùólò èǹí àgáyè [CDS P2]  
 “Tortoise would eat and constantly go to check itself to know if it could pass”  
 mbè àgbú ótājīmā ótājīmā, ò dzé lélé mé mà ò jà àgáyè [ADS P2]  
 “Tortoise would go to check itself agree eating for a while to know if it could pass”

mbè dzì ṅwájòò ṅwájòò rìgárááá nólò [CDS P1]  
 “Tortoise used a slow manner”  
 mbè rìgárá nólò [ADS P1]  
 “Tortoise sneaked from the door”

égúú gà nà àgá àgáá àgáá àgáá [CDS P3]  
 “There was now a serious famine”  
 égúú gògídè òkpáná [ADS P3]  
 “Hunger was so much for the ant”

mbè wèé tǹèkété tǹèkété tǹèkété kà ódzà àlú ṅwá ézè [CDS P3]  
 “The tortoise thought deeply on how to marry the king's daughter”  
 mbè bórú óné áwòwò tǹèkété ífé ó gà èmé [ADS P3]  
 “Tortoise, being a corny person, thought about what to do”

mgbè ótǹgídèrè dì ríngì, ó tǹgídé tǹgídé tǹgídéé ríngì [CDS P2]  
 “When he looked for the ring earnestly”  
 dì mánù gá tǹmánú dì ríngì, ná áhòwégú dì ríngì [ADS P2]  
 “The man went to look for the ring but didn't find it”  
 híe nààgá nààgá nààgáá [CDS P4]  
 “They were walking continuously”  
 mbè nà épíméjì gà nà èkó nùózò [ADS P4]  
 “A tortoise and an elephant were walking along the road”

mbè wèé gògídé égwu gògídé égwu eh... [CDS P1]  
 “Tortoise started singing, singing and singing”  
 mbè wèé gówá égwu [ADS P1]  
 “Tortoise started singing”

ó gà né èdókóté níri èdókóté níri [CDS]  
 “He was then storing food”  
 òkpáná gà dá bízi èkpókóté níri èdó [ADS]  
 “Ant was busy storing food”

- **Questioning to trigger participation, back-channelling and retention**

Some question patterns often serve to pinpoint something or enhance memory, and even facilitate learning. The Nsukka-Igbo adults used “*gáṇa?*” a lot to help capture and maintain the children's

attention and ensure they are following. Also, it was used by parents to ensure the children understood something they had just said or to help the words sink into the minds of the children, as shown below.

mbè sì nà já gà àzá àní ntfa, mbè sì nà já gà àzá gónə? àní ntfa! [CDS P1]  
“Tortoise said he would be called all of us, tortoise said he would be called What?? all of us” (children chanted the answer together with the speaker)  
mbè sí nà ònà gà àzá àní ntfa [ADS P1]  
“Tortoise said he would answer all of us”.

ákókó m nà àkóró àní ná mgbèdè híé bù màkà éwú nà mbè m sì gónə? [CDS P3]  
“The story I would tell you this evening is about a goat and a tortoise, what did I say?”  
á nà m àkóró ùnú ákókó màkà mbè nà éwú [ADS P3]  
“I would tell you a story about tortoise and goat, tortoise and goat”

óné ηwe dʒɪ wèé bjá dʒidé éwu kpám (suddenly holds a child’s arm) dʒidé éwu [CDS P1]  
“The owner of the yam caught goat pamm (onomatopoeic sound showing how it was caught) caught goat”  
óné ηwe dʒɪ dʒiri nè éwú [ADS P1]  
“The owner of the yam caught a goat”

mbè wèé... gwò égwu, mbè wèé gwògídé égwu [CDS P2]  
“Tortoise started singing, tortoise started singing continuously”  
mbè gògídé égwu [ADS P2]  
“Tortoise started singing”

òsà wèé dòró mà má ja, wèé dòró mà má ja [CDS P3]  
“Squirrel took its mother, took its mother”  
òsà dòrò mà má ja [ADS P3]  
“Squirrel took its mother”

ó bjàgídere bjàgídé nò òbòdò ómò ánòmànò [CDS P4]  
“It happened many times in the animal kingdom”  
ó bjàgídèrè nò òbòdò ómò ánòmànò [ADS P4]  
“It happened in the animal kingdom”

óné já áló ηwá ézè já èvútélí ya éjí éjí bó elifantí, yes elifant òké á wéró ódó á nà àkpó ja ódó éjí [CDS P1]  
“The person who would marry the king's daughter must bring an elephant, it is called elephant, yes elephant, the one that has tusks (demonstrates).”  
óné já áló ηwá ézè já àtótádírí éjí [ADS P1]  
“The person who would marry the king's daughter must bring an elephant”

Following the above examples in Nsukka-Igbo CDS, questioning and providing extra contexts were key tools used to stimulate child participation and language retention. Beyond repeating

themselves, the adults provide extra explanations to reinforce meaning. Similarly, the questions were like prompts used to elicit responses from the child, encouraging early back-channelling. Even if the child cannot respond meaningfully, such exchanges foster turn-taking and phonological awareness. These practices help scaffold language acquisition, allowing the child to internalise tones, structures, and conversational cues specific to Nsukka-Igbo.

- **Simplified vocabulary and extra explanations**

Grasshopper wèé sí ja bíko bjă bjă bjă bjă [CDS P2]

“Grasshopper told him to come and play with him”

í bjăkɔgə kà àní rjàgídé òwá? [ADS P2]

“Won't you like let us enjoy life?”

ómò ánómanò zòtǝrè, hé kpùtǝrì nà ágúgá ágúga sí èhééé [CDS P3]

“The animals were hidden at a corner, looking and said eh, hen”

ómò ánómanò wèé sí ókèéé [ADS P3]

“The animals then said Okay”

mbè tátátátá ò dzé tǝkú òǝwé ja núúzò mò jà àgáyè, í mà nú úzò èǝ àgáyè dí óbère, ò dí ǝwáǝwá, mbè táá táá táá ò dzé tǝkú òǝwé ja mà ó gá àgáyè [CDS P1]

“The tortoise continually ate, then went to check if it could pass through the door, you know, the door is so small, it's so tinny, when the tortoise ate, it went to check itself to see if it could pass”

mbè bò òtáíma dzí jánà dzí, ò dzé lélémé mà ò jà àgáyè [ADS P1]

“Tortoise would eat and eat yam and eat yams and then go to check if it could pass”.

Beyond the phonological and communicative features in Nsukka-Igbo CDS, adults often rely on non-verbal cues to support children's understanding and engagement. These include gesticulations, pointing at objects or referents, facial expressions, and exaggerated pauses. While these features are not the main focus of this paper, they play an important and supporting role in language development. For example, pointing to referents within the environment helped the children not only associate words with concrete and abstract ideas, but are like multimodal input that helped children link language to the physical world around them. The smiles, the demonstrations with the hands, the eyebrow modifications and the pauses, among others, also provided emotional feedback and helped maintain the children's attention. There were also times, parents played around with rolling their eyes or leaned in closer while speaking to emphasise a point or attract a child's attention. Exaggerated pauses were also used to give the children time to process information or respond, even nonverbally. These pauses often occur after a question or during a repetitive phrase. In Nsukka-Igbo CDS, such non-verbal elements were naturally woven into the storytelling interactions, helping children not only hear but also see and feel language as a social act. These cues, while subtle, greatly enhance language learning.

### **Summary of Findings**

The findings from the study on Nsukka-Igbo Child-Directed Speech (CDS) reveal both universal and language-specific phonological strategies that caregivers employ when interacting with children. Like previous studies in Indo-European contexts, the Nsukka data show that exaggerated

pitch contours, slower tempo, and melodic intonation are central in sustaining children's attention and fostering emotional bonding (Fernald, 1992; Ko, 2012). However, in contrast to Adult-Directed Speech (ADS), Nsukka caregivers rely more heavily on pitch modulation to highlight lexical tone distinctions, a necessity in tonal languages. This supports the Prosodic Bootstrapping Hypothesis, where prosodic cues guide infants in segmenting and parsing speech (Jusczyk & Krumhansl, 1993), but it also extends it by demonstrating how tonal exaggeration functions not only as an affective tool but also as a pedagogical device in tonal acquisition. While cross-linguistic studies show that infants generally prefer CDS due to its clarity and affective salience (Broesch & Bryant, 2015; ManyBabies Consortium, 2020), the Nsukka-Igbo case highlights how tonal exaggeration in CDS performs a dual role, enhancing attention while reinforcing lexical tone distinctions critical for meaning. This aligns with findings in Mandarin and Yoruba, where tone exaggeration is observed in CDS (Goswami, 2020), but the Nsukka data underscore the unique integration of tonal heightening with narrative traditions such as folktales, which are culturally embedded in Igbo orality.

Another striking feature observed is the widespread use of ideophones, repetition, and vowel lengthening in Nsukka-Igbo CDS, all of which enhance vividness, memorability, and phonological awareness. While ideophones are documented in African and Asian languages, their systematic use in CDS is underexplored. In this study, caregivers employed ideophones such as *chikiri chikiri* or *gbiiimm* to dramatise sounds and actions, thereby scaffolding children's comprehension by linking speech to sensory experiences. This complements existing research on the multimodal nature of CDS, which emphasises not only prosodic exaggeration but also the role of sound symbolism in grounding early lexical learning (Dingemanse, 2018; Lee, 2017). Repetition and vowel lengthening in Nsukka-Igbo CDS mirror patterns noted in English and French, where caregivers frequently extend sounds and recycle words for emphasis and retention (Kalashnikova & Burnham, 2018). Yet, unlike in those languages, the Nsukka data show that vowel lengthening often operates in tandem with tonal modification, thus doubling as both an attention-grabbing device and a structural cue to Igbo's phonological system. This indicates that while the communicative goals of CDS, which are clarity, engagement, and teaching, are cross-linguistic, their phonological realisations are highly language-specific, shaped by the constraints and affordances of each phonological system.

Beyond the segmental and suprasegmental patterns, the study also highlights how caregivers use communicative strategies such as questioning, simplified vocabulary, and multimodal cues (facial expressions, gestures, pauses) to facilitate child participation and retention. These findings are consistent with the Attention and Arousal Hypothesis, which argues that CDS enhances infants' focus and responsiveness through prosodic and interactive modifications (Thiessen, Hill, & Saffran, 2005). Yet, the Nsukka-Igbo data show that interactional scaffolding extends into culturally specific forms such as call-and-response storytelling, where children are prompted with questions like *gána?* "what?" to encourage back-channelling and turn-taking. This pattern resonates with broader anthropological observations of CDS in African communities, where caregiver-child interactions are embedded within oral traditions and communal learning (Ochs & Schieffelin, 1984). Compared with findings in Western contexts, where CDS is often studied in laboratory or dyadic settings, the Nsukka data emphasise a more collective, culturally grounded practice, highlighting how language socialisation and phonological learning are inseparable from cultural modes of communication. Thus, the findings confirm the universality of CDS in enhancing

acquisition while illustrating the specific ways tonal languages like Igbo adapt prosodic and phonological resources to maximise both pedagogical and cultural functions.

## **Conclusion**

This study has shown that caregivers use several strategies to make communication with children more engaging and instructive. The analysis revealed that high pitch, vowel lengthening, ideophones, and repetition are central features of Nsukka-Igbo CDS, distinguishing it clearly from Adult-Directed Speech (ADS). These features function to capture children's attention, sustain their interest, and clarify important aspects of the language, especially tone, which is crucial for meaning in Igbo. The study also found that caregivers often employed simplified vocabulary, questioning, and gestures, as well as facial expressions, to support comprehension and encourage participation. These results confirm cross-linguistic findings that CDS typically involves exaggerated prosody and simplification, but they also demonstrate how these universal strategies are adapted in a tonal language like Igbo. The exaggeration of tonal contrasts not only strengthens social and emotional connections but also directly supports the acquisition of tone as a linguistic category. Similarly, the frequent use of ideophones in Nsukka storytelling adds vividness and helps children connect speech with sensory experience. The documentation of these practices makes an important contribution to research on CDS in African tone languages, an area that remains understudied. It shows that Nsukka-Igbo CDS reflects both universal features of child-directed communication and cultural practices rooted in oral traditions. The findings also have practical relevance for language teaching, acquisition research, and efforts to preserve varieties of the Igbo language. Finally, since this is primarily a descriptive study, future studies could include a phonetic analysis of CDS.

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