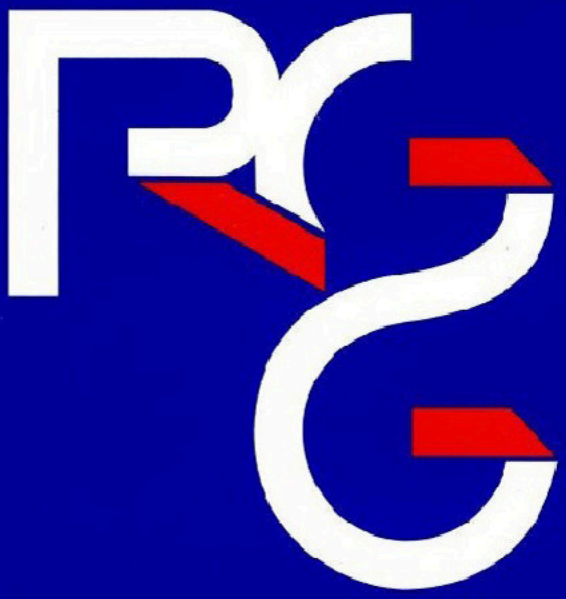

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# THE ACQUISITION OF JAMAICAN CREOLE: A RESEARCH PROJECT

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**Abstract**: *This article describes a research project aimed at filling the gap in syntactic research on language acquisition, in the area of creole languages. For too long acquisitionists have ignored the domain of creole languages, and as such the time is ripe for the present research. The purpose of this paper is to present an outline of the research project entitled 'The Acquisition of Jamaican Creole Syntax: A corpus-based study of early parameter setting', funded by the Swiss National Science Foundation grant 100015_131793/1. The goal of this project is to provide an extensive descriptive analysis of early production in the development of grammatical representations of children acquiring Jamaican Creole (JC). In addition, not only will this project contribute to scientific knowledge, but it may be applicable to well needed developments in early childhood education and language remediation in Jamaica and its diaspora. Additionally, the present project will provide an accessible database for further study of the Jamaican language.*

**Keywords**: *Jamaican Creole, language acquisition, research methods, syntax*

## *1. Introduction*

Over the last 40 years, there has been increasing research in the domain of language acquisition; but this has been predominantly on European Languages and only more recently has the sphere been opened to non-Indo-European languages. Still, the acquisition of other types of languages, such as creoles, has remained largely unexplored. In this paper, we introduce a new research project entitled 'The Acquisition of Jamaican Creole Syntax: A corpus-based study of early parameter setting', funded by the Swiss National Science Foundation (100015_131793/1) from 2011 until 2015. It represents the first longitudinal exploration of the acquisition of Jamaican Creole syntax and the only longitudinal study of Creole syntactic development. The focus of the research project was to explore the emergence and transformation of both target-consistent and target-inconsistent syntactic

developments in children acquiring JC, and to offer a theory-driven analysis on phrase-structure building.

The paper is divided into four sections. The first section situates the research project in the field of language acquisition and articulates the main research questions. Section two describes the language situation in Jamaica and its impact on the study. Section three outlines the research methodology, the selection of participants and the general analysis methods which were employed. The paper ends with a brief summary and outlook.

### *1.1. Background*

This project focuses on properties of syntactic systems of early JC and investigates the development of grammatical properties in the course of the first years of life. Most research on first language acquisition, despite differences in methodologies, converges on the fact that developing children acquire the language of their linguistic community effortlessly, under varying circumstances, in a limited amount of time. This process is normally achieved uniformly, notwithstanding cross-linguistic variations. In addition, certain developmental patterns have emerged that are cross-linguistically uniform. There is an on-going debate in the literature as to whether target-inconsistent production in early child language is a result of parameter (mis)-setting, immaturity of computational or memory capacities or other aspects of cognitive development (see Hyams 1986, 1992; Valian 1990; Guilfoyle 1984; P. Bloom 1990; L. Bloom 1970; Greenfield and Smith 1976; among others). Additionally, there is the controversial view that the parametric choices in creole languages may directly express default settings, as a consequence of the special conditions holding during the process of creolization (Bickerton, 1984, 1999; Degraff, 1999). Various authors have argued against the proposal that Creoles constitute exceptional languages (e.g. Degraff 2003, 2004; Mufwene 2000, 2001; among others), but little research has explored these predictions in terms of acquisition: Are creoles more like themselves and less like other languages, more directly mirroring properties of Universal Grammar and as such containing little or no target-inconsistency in L1 development? Our current understanding of the grammatical development of creole children is still extremely limited. While the acquisition of syntax is a vastly studied area, the acquisition of creole syntax remains a largely unexplored domain (with the exception of work on Mauritian Creole by Adone 1994 & 2012 and Adone & Vainikka 1999 and on Capeverdean by Pratas & Hyams 2009).

### *1.2. Significance and Aims*

Against this background, the research project contributes to these discussions by focusing on the acquisition of JC. JC being an analytic language, the overt realization of various syntactic elements is particularly suited for mapping incremental syntactic development of child grammar. The study sheds light of a number of controversial topics related to the nature of target-inconsistent phenomena in early languages and fixation of parameters. In particular, it examines word order patterns, null subjects, root infinitives, topicalization, focalization, interrogation, tense, mood and aspect, double negation, verb serialization, among other phenomena. We seek to address the following questions:

1. Is there a developmental order in the acquisition of lexical and functional structures, with the latter globally delayed with respect to the former (Radford 1990)? Or do lexical and functional structures co-occur at all levels of acquisition?
2. Does structure emerge incrementally in line with the incremental structure building approach to development (Radford 1990, and subsequent works) or are all

structures available when significant production starts in line with the full competence approach (Poeppel & Wexler 1993)?

3. Does the grammar of children acquiring JC replicate the highly structured cartographically-coherent pattern of the target language?

4. Is the acquisition of JC exceptional or is it acquired just like other well-studied languages? Do learners of JC go through a root null subject phase? Does their grammar reflect Root Infinitives?

5. More generally, do maturation factors affect the linguistic development (e.g. as in Borer and Wexler, 1987), or are target-inconsistencies in early productions fully reducible to the mechanism of parameter setting, and /or to an incomplete lexical acquisition?

6. Is the gradual character of the changes in early grammatical systems consistent with a parameteric approach, or does it favor item-based approaches (Tomasello 2003) or approaches based on grammar competition (Yang 2002; Roeper 2007).

Moreover, the current research provides an accessible and usable corpus of natural production of Jamaican Creole. This corpus will be archived in the CHILDES (Child Language Data Exchange System) repository. In order to provide a precise and systematic description of the acquisition of JC, the study is couched in the Principles and Parameters / minimalist framework of Generative Grammar. Nonetheless, alternative views of the construction of grammatical knowledge were considered whenever relevant.

## *2. Language Situation*

Jamaica has a population of 2.7 million inhabitants, making it the largest English-speaking Island of the Caribbean. Standard Jamaican English (English) is the official language, i.e. the language used is schools, parliament and the media. JC is the national language, and is spoken by the majority of the population. JC is, for the most part, the ambient language used in the home and is the first language of most Jamaicans. JC is acquired mainly through parent, sibling and extended family interaction while English appears to be primarily acquired from school interactions in the classroom (Carpenter, 2009). The Ministry of Education has however adopted an approach in which teachers "promote basic communication through the oral use of the home language in the early years (e.g. K-3) while facilitating the development of literacy in English" (Bryan 2001, 23 in Lewis 2010, 13).

The Jamaican language situation is described as a Creole Continuum (Decamp 1971) with speakers varying across the continuum from basilect to acrolect. The basilectal end is also referred to as the 'deep creole'. Speakers of this variety tend to be located in the more rural areas and manifest the highest degree of substratum influence (i.e. influence from West African languages as transmitted during slavery). This variety is farthest from the 'local standard'. Speakers at the other end of the continuum (the acrolect) are mainly associated with the urban areas and generally speak the 'local standard', which is the prestigious variety, containing the most 'superstrate' (British English) influences. Situated in between the two extremes are the mesolectal varieties, which share features of both extremes to varying degrees. Speakers of the basilect and the acrolect varieties may be mutually unintelligible; however this is very rare as most people can adjust their production upward or downward on the continuum (Durrleman-Tame 2008). The distinction between mesolect and basilect is not quite clear-cut as due to the relatively fluid social structure, rural varieties are becoming more and more urbanized, making more overlap between the

two varieties (Winford 1993). There are however, speakers who command only one of the varieties (monolinguals) and others who command both varieties (bilinguals). The Language Competence Survey of Jamaica (2007) reports that 46.4% of its sample demonstrated bilingualism; however while only 17.1% were monolingual English speakers, 36.5% were monolingual JC speakers. The majority of the monolingual English speakers was located in the eastern and urban areas and was concentrated in the highly skilled and professional groups.

The project concentrates primarily on the variety found at the basilectal extreme of the continuum (which we have been referring to as JC). The choice for this selection is based on the fact that it is the variety with the least influence from Standard English, and therefore offering the most syntactic novelty (in line with Durrleman-Tame 2008 and Bailey 1966). JC has been considered a canonical example of an Atlantic Creole (Patrick 2004), since it is characterized by a cluster of grammatical properties typically found in such creoles. Features that are characteristic of JC, which make it quite distinct from English, include serial verb constructions, double negation, lack of subject-auxiliary inversion, lack of case morphology or gender distinction on pronouns. To find monolingual speakers whose linguistic repertoire contains only these features and absolutely no English influence is however challenging due to the continuum situation. In the next section, we detail the procedures in ensuring the selection of the most appropriate informants for inclusion in the research project.

## *3. Research Methodology*

In order to investigate the emergence of the early syntactic systems of JC, six children, age ranging from 18 to 23 months at the beginning of recordings, were recorded for a period of 18 months. This age-range corresponds to the period in which syntax typically emerges in children and during which target-inconsistent productions have been documented in other languages. In addition, it is the period in which the methodology we have adopted can be most fruitfully utilized. The linguistic production of children younger than 18 months is often too poor and too dispersed to provide coherent data. Above 36 months, children are 'talking machines' and data collection based on longitudinal recordings is generally much less informative than research employing experimental methods. As the acquisition of JC is an understudied domain, a longitudinal corpus study is an excellent starting point to provide a general overview of the relevant phenomena.

### *3.1. Participants*

For the research project, informants were strategically selected from households where JC was the primary language spoken, and as such the interference from English in the child's linguistic environment was minimal. Given the existence of the creole continuum, various factors were considered in identifying and selecting the participants for inclusion in the study. Primary consideration was given to the area of residence and the level of education of the primary care-giver. More specifically, speakers from rural communities with less education were ranked closer to the basilectal end of the continuum (Meade 2001). In light of this observation, in the search for children to be included in our study, we targeted Southfield and neighboring communities, located in the parish of St. Elizabeth.

This area was selected based on the socio-demographic profile of the residents (Francis 2012) and general opinions on where the most conservative JC could be found.

In order to find participants in the desired age group, we consulted the local Health Centre, where all children of the community and surrounding areas are expected to be registered. A letter was sent to the Head Nurse, explaining the research objectives and the rationale behind seeking participants. A list of prospective participants and their contact details was received.

Preliminary interviews, guided by ethical principles, were conducted with care-givers of the prospective participants. We were mindful of the observers' paradox (Labov 1972). This is where a researcher tries to observe naturalistic speech, however his/her presence as an observer creates a situation in which speakers are highly conscious of their speech and will therefore modify it. In order to minimize this, the interviews were informal and took place in the homes of the prospective participants. The language used by the interviewer was JC. These initial interviews allowed us to analyze the language used by the caregivers and members of the household for typical creole features (as described in Bailey 1966; Patrick 2004; Durrleman-Tame 2008). If these features were sufficiently present, then children in such households would be eligible subjects for participation in the research project. Notwithstanding this, further selection criteria were applied, involving the willingness and availability of the informants and the level of speech production by the children.

One participant was immediately ruled out, as despite their overwhelming interest in the research, the language of the household contained many mesolectal and acrolectal features, and as such did not conform to the basilectal criteria necessary for participation. After 3 sessions of recording, another informant was not producing any words in contrast to what his mother had reported. To continue recording him was not profitable for the research project, and as such he was subsequently replaced by another informant. A third informant was clearly not interested in participating in the research project and was also removed. Additional informants were included in the study based on references received from participants. At the end of the selection process the following table represents the participants included in the study (participants are referred to via pseudonyms).

| **Name** | **Age[1] at 1st recording** | **Gender** | **Location** |
|---|---|---|---|
| **COL** | 1;6,11 | Male | Back Flagaman |
| **ALA** | 1;7,19 | Female | Southfield |
| **RJU** | 1;7,28 | Male | Back Flagaman |
| **TYA** | 1;9,18 | Female | Round Hill |
| **KEM** | 1;11,3 | Male | Round Hill |
| **SHU** | 1;11,25 | Female | Back Flagaman |

Table 1: *Research Participants*

We present in the next section individual profiles of each participant.

*3.1.1. Participants' Individual Profiles*

COL (age range: 1;6,11 – 2;11,7): COL was the youngest informant in the study. He had a Mean Length of Utterance (MLU) of 1.6 at 20 months and 3.81 at 35 months. He was

[1] Age is presented in Year; Month, Day format.

a single child living with both parents in the community of Back Flagaman. They lived in a 'nestled' area where five other houses were a stone's throw away. These houses had other children, one of whom was also a participant of this study. In addition, his paternal grandmother and cousins were immediate neighbors, and as such the yard was normally active. His maternal grandmother lived in the same community, before migrating abroad, 9 months into the study. Some of his recordings were conducted at her house; however the majority was done in his home. His father was a farmer, who habitually fished, while his mother was a housewife. After starting kindergarten at 28 months old, his parents constructed a small shop in their yard, where the mother worked as a shopkeeper.

ALA (age range: 1;7,19 – 3;0,15): At 21 months, with an MLU value at 1.48 and 5.66 at 36 months, she was one of the most vocal participants in the study. She lived in the community of Southfield with her parents in a family house where they occupied a room at the back. She was a single child for her parents but had cousins, aunts, uncles and grandparents in the extended household. Her mother held a clerical/administrative position in a governmental agency in the parish, while her father was a driver distributing goods for a furniture company. As such, when both parents were at work, the child would stay with relatives in the neighboring community of Seaview. Recordings were therefore conducted at Seaview and at the child's home. ALA started attending school at 33 months old.

RJU (age range: 1;7,28 – 3;0,25): RJU lived in an extended family household with his parents, paternal grandmother, aunts, uncles, and cousin. His cousin, a girl aged 6 years, appeared to be his best friend with whom he interacted the most. His mother was unemployed while his father worked as a farmer. Throughout the 18 month period, RJU visited his paternal grandfather in a district located about 10 miles away from his home community; where some of his recordings were conducted. During the last four months of the recording sessions, RJU and his mother relocated to the neighboring community of Crossroads, where they lived with other relatives. RJU later returned home under the care of his paternal grandmother and aunt. The majority of his recordings were conducted in his home in the presence of his cousin. At 22 months, he had an MLU of 1.39 and ending with an MLU of 4.86 at 36 months.

TYA (age range: 1;9,18 – 3;2,15): TYA lived in the community of Roundhill with her parents and two siblings. Her mother was a housewife while her father was a taxi-driver. Her immediate neighbors were her grandmother, aunts and cousins. She had an MLU of 1.22 at 23 month and 4.86 at 38 months. She started school at 35 months; at this point we saw a very rapid development in her speech, moving from an MLU of 2.16 at 34 months of age to a high of 5.38 at 37 months. Her recordings were conducted mainly in the comfort of her home.

KEM (age range: 1;11,3 – 3;3,11): KEM's MLU was 2.1 and 5.47 at 24 and 39 months respectively, peaking at 6.46 at 37 months. He started school at 32 months. He lived with his mother, maternal grandparents, aunt and uncle in the community of Roundhill. His mother was unemployed, his grandfather was a farmer and his grandmother operated a shop in the yard. KEM sometimes had playmates with whom he ran about freely in his large yard space and neighboring taverns. All of his recordings were conducted at his home.

SHU (age range: 1;11,25 – 3;4,13): SHU was the eldest participant in the research project. She had an MLU of 2.88 at 25 months and 5.02 at 40 months. She lived in the community of Back Flagaman with her mother and her brother and enjoyed a visiting relationship with her father and his family who lived just a few meters away. She was the only child for her father. Upon the passing of her father at 28 months, she lived with her paternal grandparents, aunt and uncle, and then had a visiting relationship with her mother.

Her mother was generally unemployed but worked occasionally as a store clerk. Her grandfather operated a shop and her grandmother was a housewife. She started school at 33 months of age. Recordings were conducted mainly at the home of her mother or paternal grandparents, and on a few occasions at the home of her maternal grandmother.

MLU values are plotted in Figures 1 – 6 showing a steady increase of utterance length against age for all participants in the study. On the x-axis we present the MLU values and on the y-axis the informants' age in year; months, days format. The complete list of MLU values are given in Appendix 1, Tables (1) – (6). Note that this does not include the 2 initial months of data collection and only two recordings per month are represented. Justification for this is presented in section 3.4. The MLUs were calculated automatically with the help of CLAN (Computerized Language Analysis). They are all word based, as opposed to morpheme based. Being an isolating language, all lexical and functional elements are counted as independent words. The MLU presented for JC may therefore not be immediately comparable to that in languages with morphologically complex words for which a morpheme-based count is adopted.

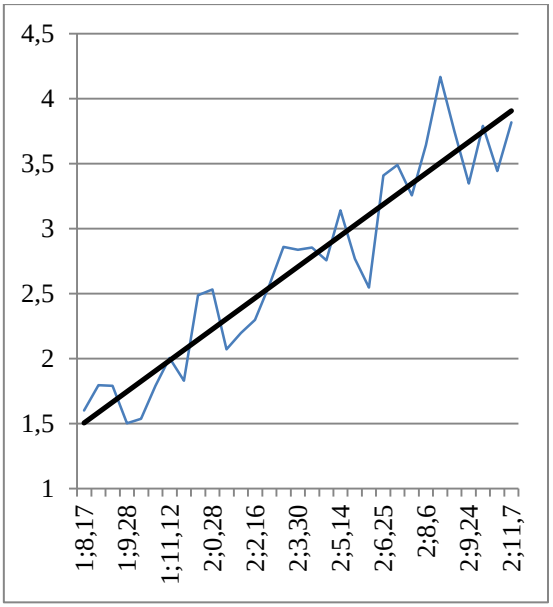


Fig. 1: *COL's MLU*

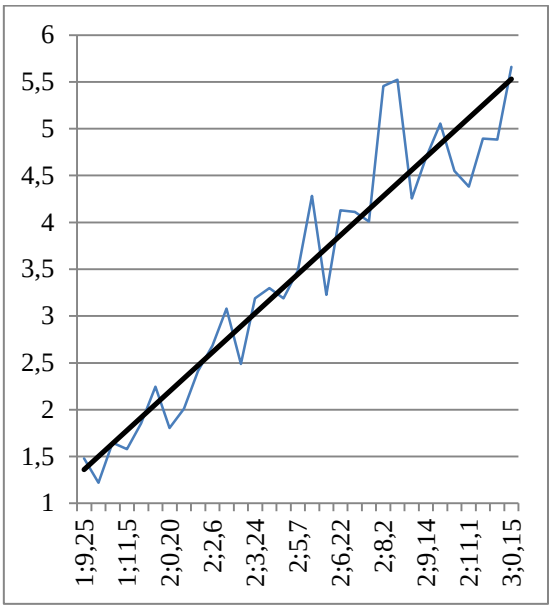


Fig. 2: *ALA's MLU*

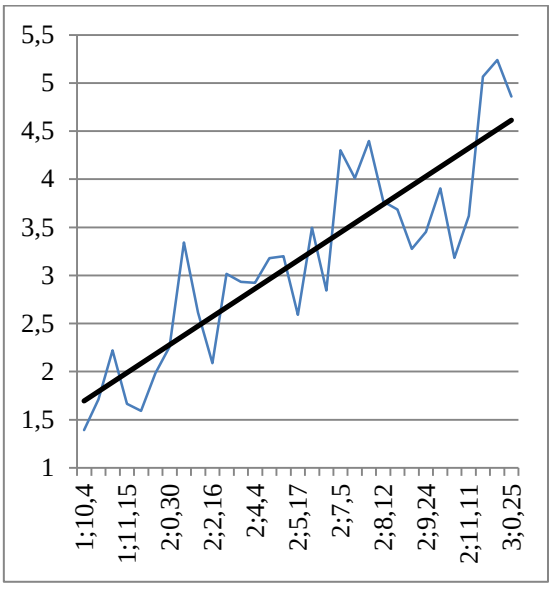


Fig. 3: *RJU's MLU*

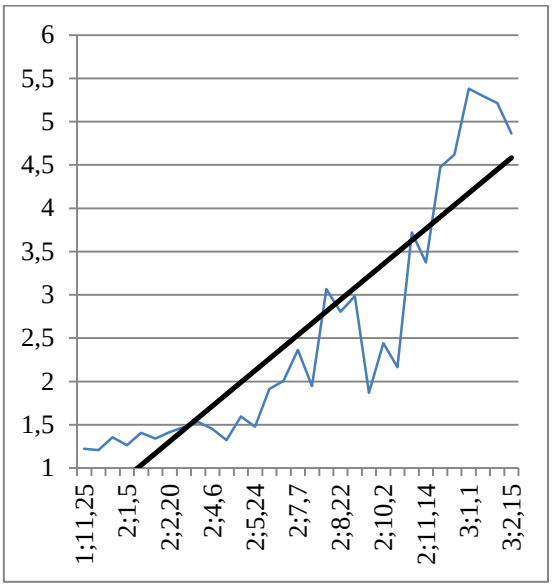


Fig. 4: TY*A's MLU*

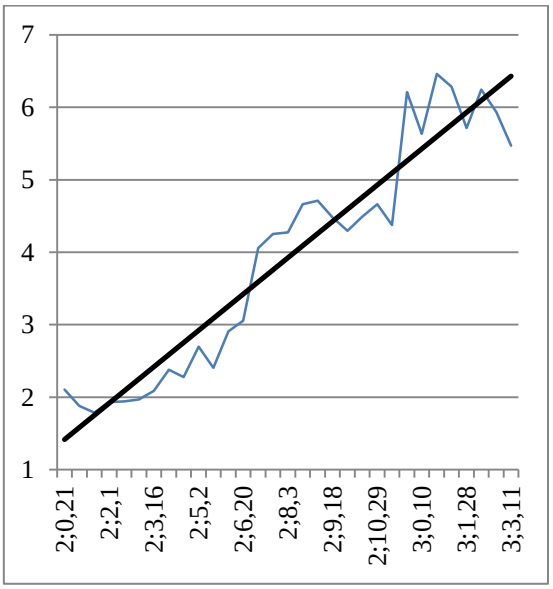


Fig. 5: *KEM's MLU*

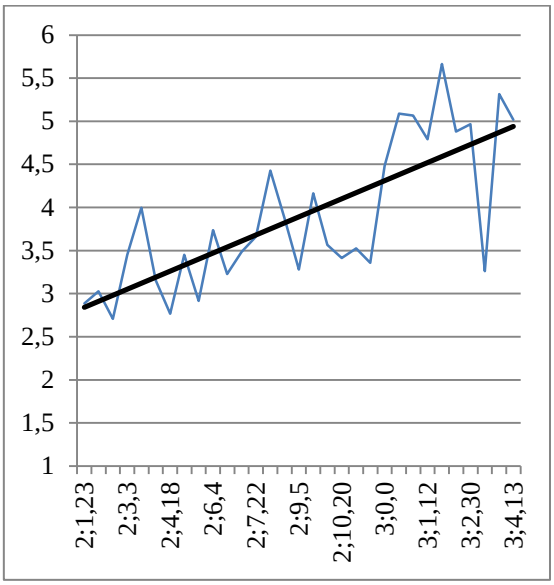


Fig. 6: *SHU's MLU*

*3.2. Recordings*

Preliminary interviews and recordings were conducted by Tamirand De Lisser, the main researcher, at the end of October 2011 and recording sessions began in November 2011. Nickesha Dawkins, a graduate student from the University of the West Indies, was employed as a Research Assistant to the project in December 2011. Along with the main researcher, she carried out the recordings and transcription of the data.

Each participant was recorded every 10 days in separate 60 minutes sessions, for the initial five months, and subsequently every 15 days for the remaining duration of the data collection phase of the project. Not accounting for the first two months when selection process was still underway, we ended-up with a database of 204 hours of recordings. Recordings were conducted in JC, in the presence of the interviewers, care-providers and in some instance other relatives and friends. The format of the recording sessions was quite informal and participants, becoming close friends with the researchers, spoke freely on various subject matters. The sessions were usually interactively built upon games and story books. The researchers would take a gift for each child at every recording session.

Based on the close proximities of the communities in which the children reside, recording sessions were usually all conducted in one day. The researchers would get in the field around 9 a.m. (sometimes earlier depending on the availability of the participants) and recordings would begin immediately. Both researches would interview ALA, as she was the only participant of her community, located approximately 15 minutes by car from the community where the other informants reside. TYA and KEM lived in the same community and as such the researchers conducted parallel recording sessions. Parallel recording sessions were usually conducted with SHU and COL, and a joint session for RJU. This schedule was not always maintained as the sessions were flexible depending on the availability of the participants. On occasions, where informants were unavailable on the

scheduled recording day, another visit would be arranged where the recording session would be conducted. As some participants started school during the course of the research project, recordings were subsequently scheduled to take place on the weekends, and in some instances after-school.

Hand-held digital voice recorders were used as the main tool for data collection. Initial recordings were conducted with the recorder attached to the child bearing a mike, however this proved to be problematic as, not only was it a major distraction for the child, but the use of a single input mike allowed only for the audible processing of the child's data and not the surrounding interlocutors. For subsequent recordings, the recorder's built-in microphone was used, with the recording device strategically positioned or held by the researcher, so as to effectively capture the required data. Where necessary, notes were recorded after the sessions.

### *3.3. Transcription and Orthography*

JC is mainly an oral language. Many of the lexemes are English-based but their phonology is quite different. We have adopted the JLU (Jamaica Language Unit) modified Cassidy-LePage orthography for all transcriptions.

All data was transcribed in CHAT (Codes for the Human Analysis of Transcripts) format, following the standard guidelines of the CHILDES Database. The transcription procedure proved to be very time consuming as it took approximately 10 hours to transcribe one hour of data. For transcribing the data, the recordings were transferred from the recording device to the computer. High quality earphones were used and the researcher transcribes the exact production as uttered. In some instances, due to surrounding noise including overlapping speech, recordings had to be listened repeatedly in order to ensure accurate transcription. Inaudible speech was transcribed as xxx. A backed-up copy of all recordings and transcriptions is stored on the University of Geneva Database for safe keeping.

### *3.4. Coding*

Based on the time-frame for the completion of the research project, a decision was taken to initially code only the utterances of the child. The approximate time to code one transcription was 6 hours. This time however could not be fixed as it depended largely on the number and length of child utterances in the transcription. Tahirah Charles, Patrice Clarke, Sheneil Ellis and Danielle Smith, all final-year students from the University of the West Indies, were employed to carry out the coding of the data, under the supervision of the main researcher.

Based on the non-standard conventions in transcribing JC, coding of the data had to be done manually. A list of codes was developed for conveying the morpho-syntactic relations of the data. Despite this comprehensive list, coding of the data did not prove to be unproblematic as there are some instances where a particular lexical item could lead to different interpretations or yield different codings in the same context. To deal with these occurrences, native speakers' judgments were employed where applicable, or the word in question coded as unknown.

In dealing with issues regarding the coding of single word utterances, we adopted the method employed in comparative syntax, assuming on grounds of continuity and uniformity, that child language approximates adult grammar (in line with Bates et.al. 1994;

Gillette et.al. 1999, among others). We acknowledge that this is not necessarily true in general but it is the necessary initial assumption for comparative research.

Several meetings were conducted with the coding team to 'iron out' all issues. Two recordings were coded per child for the period starting January 2012 to March 2013 and one coding done for each child in April 2013. The decision to start coding the data for analysis as of January 2012 was based on:

i. the maximal use of funds available
ii. the final confirmation date of all the research participants
iii. the initial two months involved familiarization of the participants with the researchers thereby maximizing their language production levels

All completed codings, amounting to a total of 186 files, were duly checked for verification of accuracy, and for inclusion of additional details as required for the analysis.

### *3.5. Analysis*

The analysis of the production data was based mainly on age and developmental stages in line with Radford (1990). Nonetheless, where necessary the participants' production was classified and compared by their MLU (see Brown 1973; Miller 1981; Miller and Chapman 1981).

Some utterances were excluded from the data analysis, these include:

-utterances in which any unintelligible portions (coded an UNK) could be critical for the analysis

- utterances where the meaning was unclear based on the context of the discourse

- the child's stuttering or self-repetitions without the production of contentful utterances in-between

- repetitions of memorized materials, e.g. songs and nursery rhymes

- immediate repetitions of adult's exact utterance

The analysis was based on automatic computing of the morpho-syntactic coding using CLAN, NotePad++ and other software where necessary. Nonetheless, manual analysis was inevitable for certain computations.

### *3.6. Limitations*

Manual transcription and coding are extremely time consuming. Our initial choice was to code only the child speech; this made the project feasible within the assigned temporal and financial constraints, but also limited the possible comparison between child production and child-directed adult speech. It would be desirable to also code adult utterances in a future development of the project.

## *4. Summary and Outlook*

This research project contributes to filling gaps that exist in acquisition research in the area of creole linguistics. The data on both target-consistencies and target-inconsistencies in the acquisition of JC offers a basis for studying the acquisition of JC against the background of the established results in comparative acquisition studies. This rich empirical data has in fact already given rise to the fine-tuning of existing theoretical analyses of

language acquisition, such as truncation theory (Rizzi 1993) (see De Lisser et al. 2015). By providing the only longitudinal corpus of Creole acquisition, we further facilitate future studies concerning grammatical development in Creoles. Finally, the impact goes beyond the realm of linguistics: by indicating, for the first time, syntactic milestones in the early speech of typically developing Creole children, our work should be useful for detecting atypical Creole development and thus lead to earlier implementation of language remediation. Indeed assessments will no longer need to be based on the acquisition of English, which is likely not to be the child's target language, but rather on the language most frequently targeted, namely creole, a medium also now encouraged in the classroom since 2001 (as advised by the Ministry of Education). In addition, the project could help writers of books for children to be informed of what grammatical level a Creole-speaking child is expected to master at a certain age, which would in turn contribute to advancing literacy in Creole. In sum, findings from the current research project should be of interest to acquisitionists, creolists, teachers, speech and language therapists, developmental psychologists and writers of children's books. We hope that our research will set the stage for more comparable research into the acquisition of other creole languages.

*Appendix: Participants' MLU*

| COL | | | | |
|---|---|---|---|---|
| RECDATE | AGE(Y;M,D) | UTT | WORDS | MLU |
| 16.01.2012 | 1;8,17 | 160 | 256 | 1.6 |
| 26.01.2012 | 1;8,27 | 181 | 325 | 1.796 |
| 16.02.2012 | 1;9,17 | 219 | 392 | 1.79 |
| 27.02.2012 | 1;9,28 | 191 | 287 | 1.503 |
| 09.03.2012 | 1;10,8 | 261 | 401 | 1.536 |
| 31.03.2012 | 1;11,1 | 251 | 449 | 1.789 |
| 11.04.2012 | 1;11,12 | 194 | 389 | 2.005 |
| 27.04.2012 | 1;11,28 | 230 | 421 | 1.83 |
| 12.05.2012 | 2;0,12 | 138 | 343 | 2.486 |
| 28.05.2012 | 2;0,28 | 162 | 410 | 2.531 |
| 13.06.2012 | 2;1,14 | 240 | 497 | 2.071 |
| 30.06.2012 | 2;2,0 | 127 | 279 | 2.197 |
| 16.07.2012 | 2;2,16 | 354 | 813 | 2.297 |
| 31.07.2012 | 2;3,1 | 196 | 503 | 2.566 |
| 15.08.2012 | 2;3,16 | 215 | 615 | 2.86 |
| 29.08.2012 | 2;3,30 | 239 | 678 | 2.837 |
| 14.09.2012 | 2;4,15 | 238 | 679 | 2.853 |
| 30.09.2012 | 2;5,0 | 200 | 551 | 2.755 |
| 14.10.2012 | 2;5,14 | 193 | 606 | 3.14 |
| 27.10.2012 | 2;5,27 | 401 | 1110 | 2.768 |
| 09.11.2012 | 2;6,10 | 218 | 555 | 2.546 |
| 24.11.2012 | 2;6,25 | 413 | 1407 | 3.407 |
| 08.12.2012 | 2;7,8 | 341 | 1190 | 3.49 |
| 22.12.2012 | 2;7,22 | 266 | 866 | 3.256 |
| 05.01.2013 | 2;8,6 | 339 | 1235 | 3.643 |
| 19.01.2013 | 2;8,20 | 343 | 1429 | 4.166 |
| 10.02.2013 | 2;9,11 | 163 | 611 | 3.748 |
| 23.02.2013 | 2;9,24 | 271 | 907 | 3.347 |
| 12.03.2013 | 2;10,10 | 275 | 1042 | 3.789 |
| 23.03.2013 | 2;10,21 | 271 | 933 | 3.443 |
| 06.04.2013 | 2;11,7 | 267 | 1019 | 3.816 |

Table 1: *COL's MLU*

| ALA | | | | |
|---|---|---|---|---|
| RECDATE | AGE(Y;M,D) | UTT | WORDS | MLU |
| 16.01.2012 | 1;9,25 | 271 | 401 | 1.48 |
| 26.01.2012 | 1;10,4 | 208 | 254 | 1.221 |
| 16.02.2012 | 1;10,25 | 385 | 634 | 1.647 |
| 27.02.2012 | 1;11,5 | 349 | 551 | 1.579 |
| 09.03.2012 | 1;11,16 | 341 | 632 | 1.853 |
| 31.03.2012 | 2;0,9 | 381 | 856 | 2.247 |
| 11.04.2012 | 2;0,20 | 254 | 458 | 1.803 |
| 27.04.2012 | 2;1,5 | 395 | 794 | 2.01 |
| 12.05.2012 | 2;1,20 | 353 | 852 | 2.414 |
| 28.05.2012 | 2;2,6 | 377 | 1012 | 2.684 |
| 13.06.2012 | 2;2,22 | 370 | 1140 | 3.081 |
| 30.06.2012 | 2;3,8 | 117 | 291 | 2.487 |
| 16.07.2012 | 2;3,24 | 397 | 1266 | 3.189 |
| 31.07.2012 | 2;4,9 | 283 | 933 | 3.297 |
| 15.08.2012 | 2;4,24 | 388 | 1237 | 3.188 |
| 29.08.2012 | 2;5,7 | 294 | 1025 | 3.486 |
| 14.09.2012 | 2;5,23 | 493 | 2111 | 4.282 |
| 04.10.2012 | 2;6,12 | 193 | 623 | 3.228 |
| 14.10.2012 | 2;6,22 | 227 | 937 | 4.128 |
| 27.10.2012 | 2;7,5 | 336 | 1382 | 4.113 |
| 09.11.2012 | 2;7,18 | 361 | 1448 | 4.011 |
| 24.11.2012 | 2;8,2 | 467 | 2547 | 5.454 |
| 08.12.2012 | 2;8,16 | 313 | 1729 | 5.524 |
| 22.12.2012 | 2;9,0 | 294 | 1251 | 4.255 |
| 05.01.2013 | 2;9,14 | 285 | 1336 | 4.688 |
| 19.01.2013 | 2;9,28 | 249 | 1259 | 5.056 |
| 16.02.2013 | 2;10,25 | 297 | 1351 | 4.549 |
| 23.02.2013 | 2;11,1 | 246 | 1078 | 4.382 |
| 12.03.2013 | 2;11,18 | 264 | 1292 | 4.894 |
| 23.03.2013 | 3;0,1 | 277 | 1353 | 4.884 |
| 06.04.2013 | 3;0,15 | 341 | 1930 | 5.66 |

Table 2: *ALA's MLU*

| RJU | | | | |
|---|---|---|---|---|
| RECDATE | AGE(Y;M,D) | UTT | WORDS | MLU |
| 16.01.2012 | 1;10,4 | 51 | 71 | 1.392 |
| 26.01.2012 | 1;10,14 | 80 | 137 | 1.712 |
| 16.02.2012 | 1;11,4 | 198 | 440 | 2.222 |
| 27.02.2012 | 1;11,15 | 39 | 65 | 1.667 |
| 09.03.2012 | 1;11,26 | 66 | 105 | 1.591 |
| 31.03.2012 | 2;0,19 | 135 | 268 | 1.985 |
| 11.04.2012 | 2;0,30 | 147 | 332 | 2.259 |
| 27.04.2012 | 2;1,15 | 207 | 692 | 3.343 |
| 12.05.2012 | 2;2,0 | 202 | 528 | 2.614 |
| 28.05.2012 | 2;2,16 | 173 | 361 | 2.087 |
| 13.06.2012 | 2;3,1 | 315 | 950 | 3.016 |
| 30.06.2012 | 2;3,18 | 206 | 604 | 2.932 |
| 16.07.2012 | 2;4,4 | 207 | 605 | 2.923 |
| 31.07.2012 | 2;4,19 | 212 | 674 | 3.179 |
| 15.08.2012 | 2;5,3 | 136 | 435 | 3.199 |
| 29.08.2012 | 2;5,17 | 220 | 570 | 2.591 |
| 14.09.2012 | 2;6,2 | 206 | 720 | 3.495 |
| 30.09.2012 | 2;6,18 | 268 | 762 | 2.843 |
| 17.10.2012 | 2;7,5 | 249 | 1071 | 4.301 |
| 27.10.2012 | 2;7,15 | 257 | 1031 | 4.012 |
| 09.11.2012 | 2;7,28 | 209 | 919 | 4.397 |
| 24.11.2012 | 2;8,12 | 276 | 1040 | 3.768 |
| 08.12.2012 | 2;8,26 | 233 | 859 | 3.687 |
| 22.12.2012 | 2;9,10 | 236 | 773 | 3.275 |
| 05.01.2013 | 2;9,24 | 226 | 780 | 3.451 |
| 19.01.2013 | 2;10,7 | 187 | 730 | 3.904 |
| 10.02.2013 | 2;10,29 | 142 | 452 | 3.183 |
| 23.02.2013 | 2;11,11 | 173 | 626 | 3.618 |
| 09.03.2013 | 2;11,25 | 328 | 1662 | 5.067 |
| 23.03.2013 | 3;0,11 | 206 | 1079 | 5.238 |
| 06.04.2013 | 3;0,25 | 277 | 1346 | 4.859 |

Table 3: *RJU's MLU*

| TYA | | | | |
|---|---|---|---|---|
| RECDATE | AGE(Y;M,D) | UTT | WORDS | MLU |
| 16.01.2012 | 1;11,25 | 126 | 154 | 1.222 |
| 26.01.2012 | 2;0,4 | 130 | 157 | 1.208 |
| 16.02.2012 | 2;0,25 | 113 | 153 | 1.354 |
| 27.02.2012 | 2;1,5 | 257 | 324 | 1.261 |
| 09.03.2012 | 2;1,16 | 108 | 152 | 1.407 |
| 31.03.2012 | 2;2,9 | 121 | 162 | 1.339 |
| 11.04.2012 | 2;2,20 | 174 | 246 | 1.414 |
| 27.04.2012 | 2;3,5 | 101 | 149 | 1.475 |
| 12.05.2012 | 2;3,20 | 218 | 334 | 1.532 |
| 28.05.2012 | 2;4,6 | 162 | 235 | 1.451 |
| 13.06.2012 | 2;4,22 | 128 | 169 | 1.32 |
| 30.06.2012 | 2;5,8 | 62 | 99 | 1.597 |
| 16.07.2012 | 2;5,24 | 103 | 152 | 1.476 |
| 31.07.2012 | 2;6,9 | 58 | 111 | 1.914 |
| 15.08.2012 | 2;6,24 | 205 | 411 | 2.005 |
| 29.08.2012 | 2;7,7 | 22 | 52 | 2.364 |
| 14.09.2012 | 2;7,23 | 240 | 467 | 1.946 |
| 30.09.2012 | 2;8,8 | 302 | 926 | 3.066 |
| 14.10.2012 | 2;8,22 | 143 | 401 | 2.804 |
| 27.10.2012 | 2;9,5 | 233 | 696 | 2.987 |
| 09.11.2012 | 2;9,18 | 53 | 99 | 1.868 |
| 24.11.2012 | 2;10,2 | 260 | 635 | 2.442 |
| 08.12.2012 | 2;10,16 | 178 | 385 | 2.163 |
| 22.12.2012 | 2;11,0 | 137 | 510 | 3.723 |
| 05.01.2013 | 2;11,14 | 271 | 914 | 3.373 |
| 19.01.2013 | 2;11,28 | 261 | 1168 | 4.475 |
| 10.02.2013 | 3;0,19 | 42 | 194 | 4.619 |
| 23.02.2013 | 3;1,1 | 268 | 1442 | 5.381 |
| 09.03.2013 | 3;1,15 | 325 | 1722 | 5.298 |
| 23.03.2013 | 3;2,1 | 177 | 923 | 5.215 |
| 06.04.2013 | 3;2,15 | 175 | 851 | 4.863 |

Table 4: *TYA's MLU*

| KEM | | | | |
|---|---|---|---|---|
| RECDATE | AGE(Y;M,D) | UTT | WORDS | MLU |
| 16.01.2012 | 2;0,21 | 280 | 589 | 2.104 |
| 26.01.2012 | 2;1,0 | 348 | 654 | 1.879 |
| 16.02.2012 | 2;1,21 | 309 | 552 | 1.786 |
| 27.02.2012 | 2;2,1 | 297 | 574 | 1.933 |
| 09.03.2012 | 2;2,12 | 423 | 821 | 1.941 |
| 31.03.2012 | 2;3,5 | 305 | 600 | 1.967 |
| 11.04.2012 | 2;3,16 | 347 | 725 | 2.089 |
| 27.04.2012 | 2;4,1 | 392 | 933 | 2.38 |
| 12.05.2012 | 2;4,16 | 337 | 767 | 2.276 |
| 28.05.2012 | 2;5,2 | 279 | 753 | 2.699 |
| 13.06.2012 | 2;5,18 | 386 | 929 | 2.407 |
| 30.06.2012 | 2;6,4 | 303 | 882 | 2.911 |
| 16.07.2012 | 2;6,20 | 376 | 1148 | 3.053 |
| 31.07.2012 | 2;7,5 | 373 | 1513 | 4.056 |
| 15.08.2012 | 2;7,20 | 311 | 1322 | 4.251 |
| 29.08.2012 | 2;8,3 | 258 | 1103 | 4.275 |
| 14.09.2012 | 2;8,19 | 276 | 1287 | 4.663 |
| 30.09.2012 | 2;9,4 | 341 | 1607 | 4.713 |
| 14.10.2012 | 2;9,18 | 261 | 1170 | 4.483 |
| 27.10.2012 | 2;10,1 | 159 | 683 | 4.296 |
| 09.11.2012 | 2;10,14 | 254 | 1141 | 4.492 |
| 24.11.2012 | 2;10,29 | 404 | 1884 | 4.663 |
| 08.12.2012 | 2;11,12 | 265 | 1160 | 4.377 |
| 22.12.2012 | 2;11,26 | 355 | 2203 | 6.206 |
| 05.01.2013 | 3;0,10 | 285 | 1606 | 5.635 |
| 19.01.2013 | 3;0,24 | 333 | 2151 | 6.459 |
| 10.02.2013 | 3;1,15 | 261 | 1640 | 6.284 |
| 23.02.2013 | 3;1,28 | 339 | 1937 | 5.714 |
| 09.03.2013 | 3;2,11 | 384 | 2397 | 6.242 |
| 23.03.2013 | 3;2,25 | 384 | 2278 | 5.932 |
| 06.04.2013 | 3;3,11 | 295 | 1614 | 5.471 |

Table 5: *KEM's MLU*

| SHU | | | | |
|---|---|---|---|---|
| RECDATE | AGE(Y;M,D) | UTT | WORDS | MLU |
| 16.01.2012 | 2;1,23 | 177 | 511 | 2.887 |
| 26.01.2012 | 2;2,2 | 233 | 705 | 3.026 |
| 04.02.2012 | 2;2,11 | 191 | 517 | 2.707 |
| 27.02.2012 | 2;3,3 | 307 | 1059 | 3.45 |
| 09.03.2012 | 2;3,14 | 287 | 1147 | 3.997 |
| 31.03.2012 | 2;4,7 | 91 | 287 | 3.154 |
| 11.04.2012 | 2;4,18 | 133 | 368 | 2.767 |
| 27.04.2012 | 2;5,3 | 175 | 604 | 3.451 |
| 12.05.2012 | 2;5,18 | 372 | 1084 | 2.914 |
| 28.05.2012 | 2;6,4 | 239 | 893 | 3.736 |
| 13.06.2012 | 2;6,20 | 234 | 755 | 3.226 |
| 10.07.2012 | 2;7,16 | 332 | 1157 | 3.485 |
| 16.07.2012 | 2;7,22 | 244 | 894 | 3.664 |
| 31.07.2012 | 2;8,7 | 244 | 1080 | 4.426 |
| 15.08.2012 | 2;8,22 | 171 | 663 | 3.877 |
| 29.08.2012 | 2;9,5 | 281 | 921 | 3.278 |
| 14.09.2012 | 2;9,21 | 333 | 1387 | 4.165 |
| 30.09.2012 | 2;10,6 | 195 | 695 | 3.564 |
| 14.10.2012 | 2;10,20 | 58 | 198 | 3.414 |
| 27.10.2012 | 2;11,3 | 284 | 1001 | 3.525 |
| 09.11.2012 | 2;11,16 | 156 | 524 | 3.359 |
| 24.11.2012 | 3;0,0 | 299 | 1340 | 4.482 |
| 13.12.2012 | 3;0,19 | 283 | 1440 | 5.088 |
| 22.12.2012 | 3;0,28 | 375 | 1900 | 5.067 |
| 05.01.2013 | 3;1,12 | 285 | 1366 | 4.793 |
| 19.01.2013 | 3;1,26 | 509 | 2883 | 5.664 |
| 10.02.2013 | 3;2,17 | 193 | 942 | 4.881 |
| 23.02.2013 | 3;2,30 | 226 | 1122 | 4.965 |
| 09.03.2013 | 3;3,13 | 191 | 623 | 3.262 |
| 23.03.2013 | 3;3,27 | 306 | 1626 | 5.314 |
| 06.04.2013 | 3;4,13 | 331 | 1661 | 5.018 |

Table 6: *SHU's MLU*

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