A reflection on scientific and mathematical terms in Mauritian Kreol at primary level: an overview

Article · March 2014

3 authors:

Shameem Oozeerally
Mauritius Institute of Education
47 PUBLICATIONS **28** CITATIONS

SEE PROFILE

Rajeev Nenduradu
Mauritius Institute of Education
4 PUBLICATIONS **13** CITATIONS

SEE PROFILE

Sarojiny saddul-hauzaree
Mauritius Institute of Education
2 PUBLICATIONS **1** CITATION

SEE PROFILE

A reflection on scientific and mathematical terms in Mauritian Kreol at primary level: an overview

S. Oozeerally (French Dept.)

R. Nenduradu (Mathematics Dept.)

S. Sadul Hauzaree (Science Dept.)

Abstract

In January 2012, Mauritian Creole (Kreol), was introduced in schools as a subject. From a (socio)linguistic perspective, this represents a significant advancement, with the expanding range of functions of the language, increasing autonomy, as well as its upwards social movement, in the form of institutionalisation. Consequently, this also has effects on the use of the language, which is no longer solely confined to the oral, affective and informal domains (Carpooran, 2007). The use of Kreol in schools implies the modification and enrichment of the internal ecosystem (Mufwene, 2008) of the language, more specifically in the lexical domain (Sebba, 1997). With respect to this evolutionary process, Kreol must be 'equipped' to reflect ever-changing realities, whether it is in the informational, scientific or mathematical domains. However, a number of precautions must be taken when analyzing and proposing possible equivalents from English to Kreol. This present work, in its current form, does not pretend to venture in the terminological and terminographical domains; it aims to reflect on possible technical terms in view of facilitating the flow of information for writers and speakers of Kreol. Its scope may be broadened through a review process concerning the main stakeholders and institutions thinking about the development of Kreol.

This work proposes to address the problem of finding Kreol equivalents of English technical terms, from a pedagogical perspective, in the mathematical and scientific domains for the primary level. A sample of domain-specific terms was selected principally from science and mathematics textbooks for primary level, and different equivalents were considered by taking into consideration the semantic and socio-symbolic aspects among others. A number of questionnaires, acting as 'reception tests' were also administered, mostly to MIE TDP and TDS trainees in order to gain further insights into the problem, in accordance with the principles of democratic dialogue (Bang and Døør, 2007).

Objective:

To propose a reflection on mathematical and scientific terms, including words and phrases, in Creole for pedagogical purposes.

Background:

In January 2012, Kreol was introduced in schools as a subject. From a (socio)linguistic perspective, this represents a significant advancement (+ status [+institutionalisation, +autonomy]. Consequently, this also has effects on the use of the language, which is no longer solely confined to the oral, affective and informal domains (Carpooran, 2007). The use

of Kreol in schools implies the modification and enrichment of the internal ecosystem of the language, more specifically in the lexical domain. With respect to this evolutionary process, Kreol must be 'equipped' to reflect ever-changing realities, whether it is in the information, scientific or mathematical domains. This work proposes to study how concepts can be expressed, from a pedagogical perspective, in the mathematical and scientific domains for the primary level. Moreover, this work is in line with the final proposals of Lortograf Kreol Morisien (2011).

Limitations:

This work is fundamentally a set of proposals focused on mathematical and scientific concepts to be learned by primary school pupils. It does not pretend to venture in the terminological and terminographical domains; it aims to provide rhetoric insights, that is, to facilitate the flow of information for writers and speakers. Its scope may be broadened through a review process concerning the main stakeholders and institutions thinking about the development of Kreol.

Introduction

The introduction of Mauritian Creole, henceforth Kreol[1], at primary level marked a significant step in the (socio)linguistic dynamics of Mauritius. The language has been institutionally recognised as forming part of the curriculum, albeit in a form which is contradictory to its actual status. Indeed, as mentioned in the 'addendum to national curriculum framework Kreol Morisien', Kreol has been introduced as an ancestral language 'at par with other ancestral languages' (p. 7). Outside the "epistemological difficulties" (Carpooran, 2010 p. 172, our translation) surrounding the term 'ancestral language'[2], the introduction of Kreol follows the same *modus operandi* as the other 'ancestral' languages, while in reality, it is one of the 'transcommunal vehicular languages' beside French and English (Carpooran, 2007). However, this does not form part of our present discussion. Irrespective of how it has been introduced in schools, the introduction of Kreol remains an important decision (+ status [+institutionalisation, +autonomy]).

This upward movement of Kreol has consequences in how the language is viewed and used; considering the changes concerning Kreol, the language must be 'equipped' in order to reflect ever-changing realities, especially in the process of its codification to enable its use in schools. This work proposes to address the question of how concepts can be expressed in Kreol, from a pedagogical perspective, in the mathematical and scientific domains for the primary level, in line with the final proposals of Lortograf Kreol Morisien.

> "*Pou bizin ena enn deziem letap ki pou interes li ek normalizasion bann term teknik ki servi dan diferan disiplinn ek dan diferan spesialite. Enn letap kot pou bizin travay lor bann konsep ki pou servi dan bann size teknik kouma Matematik, Fiziks, Biolozi, etc*" (Lortograf Kreol Morisien, 2011 p. 53)

> "Another phase which focuses on normalisation of technical terms in different disciplines will be needed; a phase where work needs to be done on concepts which will be used in technical subjects like mathematics, physics, biology etc."

In its current form, this work serves as a testing phase, in view of a larger project to be carried out in primary schools.

---

[1] We will be using the terms Mauritian Creole and Kreol interchangeably

[2] According to Carpooran (2010), the denomination of 'ancestral languages' represents an "epistemological impossibility" mainly due to the unclear semantic value of the adjective 'ancestral'; following a study conducted among students of the University of Mauritius, it was found that most of the individuals identified their ancestors as belonging to the fourth (preceding) generation in their genealogy. However, due to the multiple lineage bifurcations, and the heterogeneous sociolinguistic practices of the concerned individuals, it becomes increasingly difficult to construct a reliable definition of what an ancestral language may be.

Objective

The main objective of this present work is to reflect on equivalent Kreol terms with respect to English technical terms from a pedagogical perspective in the mathematical and scientific domains at primary level. It also aims to produce a set of proposals of technical terms in Kreol in view of an eventual normalisation process, as brought forward by the Akademi Kreol Morisien.

Theoretical postulates and background

In this section, we will propose a reflection around some theoretical issues pertaining to the development of Creole languages in general, and more specifically Mauritian Creole. We will focus on *ausbau* and *abstand*, lexical creation and ideology, as well as some philosophical aspects on languages and dialogue.

Ausbau **and** *abstand***: the question of autonomy and distance**

In the case of Creole language development, be it in the orthographic or lexical fields, the question of *ausbau* and *abstand* is particularly important (Romaine, 1996; Sebba, 1997, 2000). *Ausbau*, in the terminology of Kloss (1967, 1978, cited by Sebba, 1998) refers to the elaboration of a written language for specific high functions, while *abstand* refers to the linguistic distance from other similar languages. Deuber and Hinrichs (2007) highlight this difficulty in their reflection around the possibilities of an orthographic system in Jamaican Creole and Nigerian Pidgin.

According to Joseph (1987, cited in Sebba, 1998), the growth of a Creole in *ausbau* towards its 'superposed model' implies a simultaneous shrinkage in *abstand*, because the H model represents the language from which the Creole in question needs to be independent of. There is therefore a type of convergence, in the developmental process, towards the high language, which is likely to be the lexifier language, thus bringing forward the paradoxical relationship between ausbau and abstand, especially when the question of enrichment/development is evoked. In other words, while moving towards autonomy, the creole language is systemically closer to its lexifier language, while, at the same time, trying to maintain distance in the form of *abstand*.

Another potential problem concerning the development of creoles in *ausbau* is 'acrolectalisation' where the Creole languages converge towards the lexifier (Siegel, 2007). If such a process is important in magnitude, the question of decreolisation may emerge. In this present study, the question of decreolisation is not totally relevant. If we talk of acrolect, and eventually convergence towards a decreolised form, we need to refer to the lexifier language,

which is French in the case of Kreol. Nevertheless, though presented as being rare, the codified form of the creole language does not necessarily need to be based on the lexifier, as pointed out by Joseph (1987). This appears to be the case for the present study, as we are taking the existing social practices – focusing on teacher practices, where the medium of instruction is English – as the starting point.

Another point which must be noted, especially considering the context of this present work, is the situation which is different. In Mauritius, the lexifier language for Kreol can be considered as French, and with respect to the diglossic diagram of Carpooran (2007, p. 151), it can be viewed as the immediate superposed model, with English being the main 'language of distance' (Deuber and Hinrichs, 2007), as its functions are mainly confined to the written and administrative domains (Carpooran, 2007). The terms and expressions which are involved in this work are in fact English words; the medium of instruction in Mauritius is English and part of our reflection is focused on the potential use of the terms as loanwords.

As Sebba legitimately points out, "whether at the same time the creole can elaborate a literary standard without modelling itself on the lexifier, thus growing simultaneously in terms of Ausbau and Abstand (*pace* Joseph) is an empirical question - one which cannot be answered unless some serious attempt is made to introduce a standard variety for at least one of the English-lexicon creoles" (Sebba, 1998 p. 7). While Sebba (1997) agrees that saying that the problem of creoles and pidgins development is unsolvable represents a pessimistic standpoint, he does not indicate potential ways where this problem can be addressed. One of the reasons may be the socio-contextual grounding of languages; each language develops according to the ecosystem in which it evolves. As Stein (1982) points out, Mauritian Creole is one of the two languages which can be considered as 'Mauritian'- in the sense that they have developed according to the local configurations- the other one being local Bhojpuri.

Issues around lexical creation and registers

All languages are dynamic in nature, and generally evolve in order to suit the needs of its speakers, according to the changing ecosystem in which they are inscribed (Sebba, 1997). The ecological approach is one of the theoretical stances which allow us to conceptualise languages and their interaction with the environment (Skutnabb-Kangas, 2000; Fill and Mühlhäusler, 2001; Mufwene, 2001; 2008; Bang and Døør, 2007), As the diagram below points out, there is perpetual inter(retro)action (Morin, 1992) between the internal ecosystem of the language, which comprises the morphological, phonological and syntactic aspects among others (Mufwene, 2008), and the external ecosystem which is the environmental dimension constituted of the socio-economic and 'external'[3] realities. In the context of this present work, we will focus on the question relating to lexical enrichment when we are

---

[3] We will be careful with the use of the term 'external'; from the ecological perspective, the environment forms integral part of language issues. Here, 'external' only and simply refers to whatever is 'around' the language-system.

referring to the internal ecosystem. On the other hand, the introduction of Kreol in schools, as well as the constant contact and interaction between the three vehicular languages-English, French and Kreol (Carpooran, 2007)- form part of the external ecosystem.
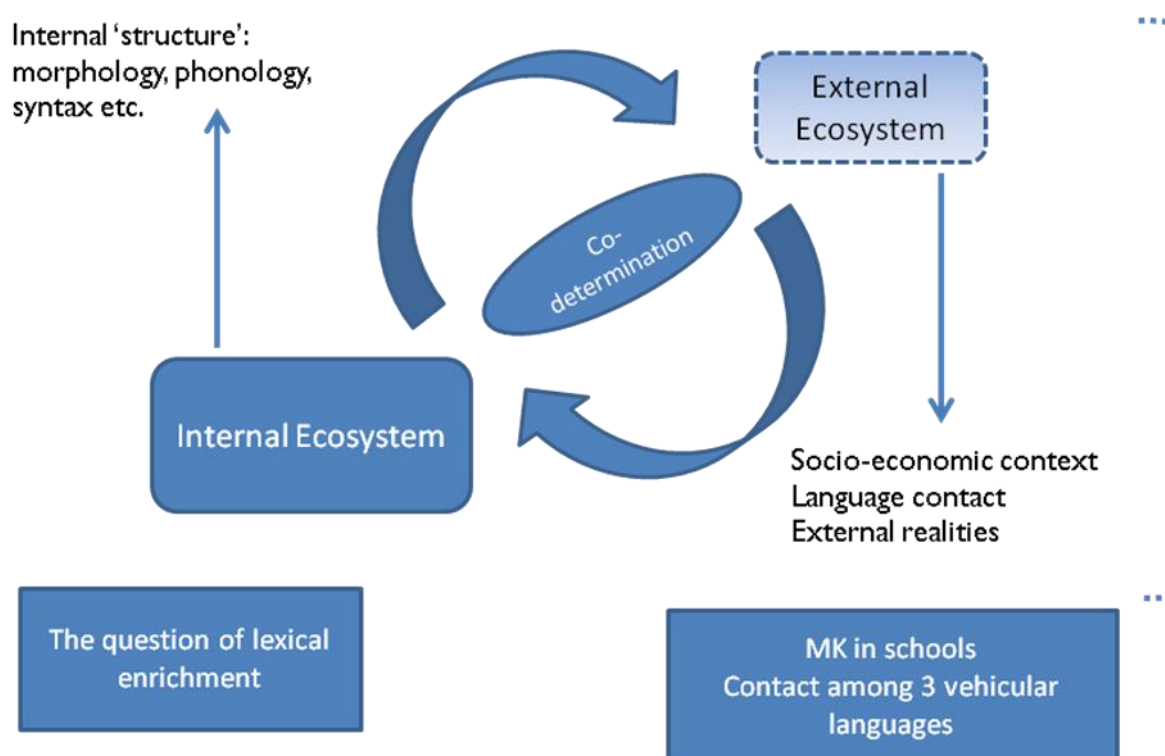

Figure 1: Diagrammatic representation of ecological dynamics and lexical enrichment

Likewise, pidgins and creoles also develop in order to respond to a wider range of speaker demands, for a wider range of functions (Sebba, 1997). As Sebba points out, "in order to be used successfully for 'high' functions such as administration, education and culture (i.e for uses we typically associate with writing), a language has to develop stylistic registers which speakers feel are appropriate to these purposes" (1997, P. 239). This at least partly implies the process of lexical creation.

In her discussion on lexical creation in Creole languages, Hazael-Massieux (1993) notes that creole languages do not necessarily need to go through a process of lexicalisation, *stricto sensu*; instead, she talks of periphrasis, where meaning is expressed through the use of two or more words. In the same line of reflection, the author states that Creole languages have more recourse to verbal rather than nominal vocabulary in order to express abstract realities. In the same line, Sebba (1997) elaborates on the presence of circumlocution as a strategy in any language "for giving a description of something which does not (yet) have a name in the

language"(p. 117). While this posture is relevant with respect to how creoles have been functioning, especially in the oral registers, it does not take into consideration the socio-contextual evolutionary dynamics of the language. In Mauritius, for example, Creole already has an official orthography (Lortograf Kreol Morisien, 2011) and grammar (Gramer Kreol Morisien, 2011); it is being taught at school level, and the demand for lexical enrichment exists in a concrete manner. The use of the language at school, and its increasing written use in society at large[4] does attribute more legitimacy to the question of lexical creation, where periphrasis, for example, may be seen as inappropriate for reasons of simplicity and direct reference.

As mentioned before, language contact brings about modifications and evolutions in the 'identity' of languages, a phenomenon analogous to complex systems which evolve in a given environment. In this perspective, interpenetration in the form of loanwords, for example, is considered as forming part of the evolutionary process of languages. In other words, languages diversify by assimilating elements which are found in their immediate environment, whether these elements originate from other languages, or from various aspects of external realities. Sebba (1997) states that the borrowing words which are not already part of the language's word stock represents a form of lexical creation. In the case of creoles and pidgins, Sebba (1997) also talks of the importance of taking into consideration the phonological norms of the borrower language.

One of the fundamental questions therefore, is how to proceed with lexical creation in the scientific and mathematical registers, while considering aspects like *ausbau* and *abstand* and ideology.

The question of ideology

Another aspect which is important in discussion concerning the development of Creole languages is ideology. Sebba (1996, 1998) applies Street's (1984) model of literacy to his reflection on orthographic practices. The autonomous model is based on the postulate that literacy is a technology which can be disjointed from social contexts; in this line of reasoning, orthographic practices can be seen as ideologically neutral. On the other hand, the ideological model of literacy takes into account the social practices of writing and reading (Street, 1984). When transposed to the problem of orthographic practices, the focus is on symbolic differences between the Creole language and its lexifier (Sebba, 1998; 2000). However, Street (1984) argues that it is the autonomous model which is more ideological; this view is shared by Sebba (1998, 2000), where technical choices, which are often based on ideological stances, are not made explicit. Ideological issues are also discussed by Hazael-Massieux

---

[4] There is an expanding repertoire of written texts in Mauritian Creole (with respect to the local context), beginning with school textbooks (Standard One, Standard Two and Standard 3), translated comics (Tintin ek sekre bato likorn), children's books (Playgroup, Abaim), reference material (Proverb ek Sirandann, Diksioner Morisien, Lortograf Kreol Morisien, Gramer Kreol Morisien), Anou Koz Parol (a regular column in Le Mauricien newspaper in Mauritian Creole) etc.

(1993), who cites the example of the orthography proposed by Bernabé of the GEREC group, which is qualified as being complicated and unnatural, due to a strict anti-etymological ideology, itself based on the principle of 'maximum deviance'. The rationale behind this principle is that the Creole language should maintain maximum distance (*abstand*) from French in order to preserve its 'authenticity'[5].

The technical aspects of the official orthography of Kreol are mainly based on a phonemic orthography (for reasons of transparency, as demonstrated in the document, Lortograf Kreol Morisien, 2011), which can be equated to an autonomous stance. However, the *modus operandi* behind the conception of the orthographic system, where existing social practices have been taken into consideration, including the main recommendations of Grafi-Larmoni (2004) can also be qualified as being ideological. It is therefore possible to say that the principles of autonomy and ideology are not necessarily mutually exclusive, and can (co)exist in a continuum. In this work, the consideration of existing practices at school level, as well as the considering of terms which are already in use in the language in general (see below: choice of words) leans towards the ideological pole, while aspects relating to the (eventual) creolisation of English terms are more of an autonomous stance: this present work will take on board the mechanisms by which loanwords can be integrated in the Creole language

Language and the principles of democratic dialogue

For the purpose of this research, we are adopting the principles of democratic dialogue as a philosophical and methodological guidepost.

Observing the principles of democratic dialogue, according to Bang and Døør, (2007) can promote integration and consensus in a potentially conflict-creating situation. The eventual proposal of terms, even if they are domain-specific, is not neutral and can be linked to identity and ideology. We therefore consider the integration of the three principles of democratic dialogue as being important for such type of research: the principle of sharing, which consists of identifying common points, the principle of difference, which aims to identify diverging perspectives and different interests in view of a better comprehension of the situation, and finally, the principle of experiment, which aims to co-create experiments in view of developing an optimal overall comprehension of the processes involved.

In this work, the principle of sharing will materialise in the study of the common terms/words shared in the scientific and usual registers (see the right pole in the continuum below). The principle of difference will allow us to work on new terms which are not present in the usual register and which need to be proposed. Finally, the principle of experiment represents the empirical phase, which, in itself, implies the principle of sharing and difference. A questionnaire will be proposed and distributed to participants, who will have the option to agree with the equivalents proposed (principle of sharing), or disagree and propose and

---

[5] Here, we can see that the dynamic equilibrium between *abstand* and *ausbau* is an important factor, especially with respect to the 'reception' from the actual users of the language. In the case of the GEREC group, the attempt to 'unnaturally' push the language towards abstand resulted in rejection from potential users, due to reasons relating to simplicity and ease of use, among others.

equivalent which is deemed more appropriate (principle of difference). The principle of experiment will feed back on our reflection on the terms and words which will be proposed
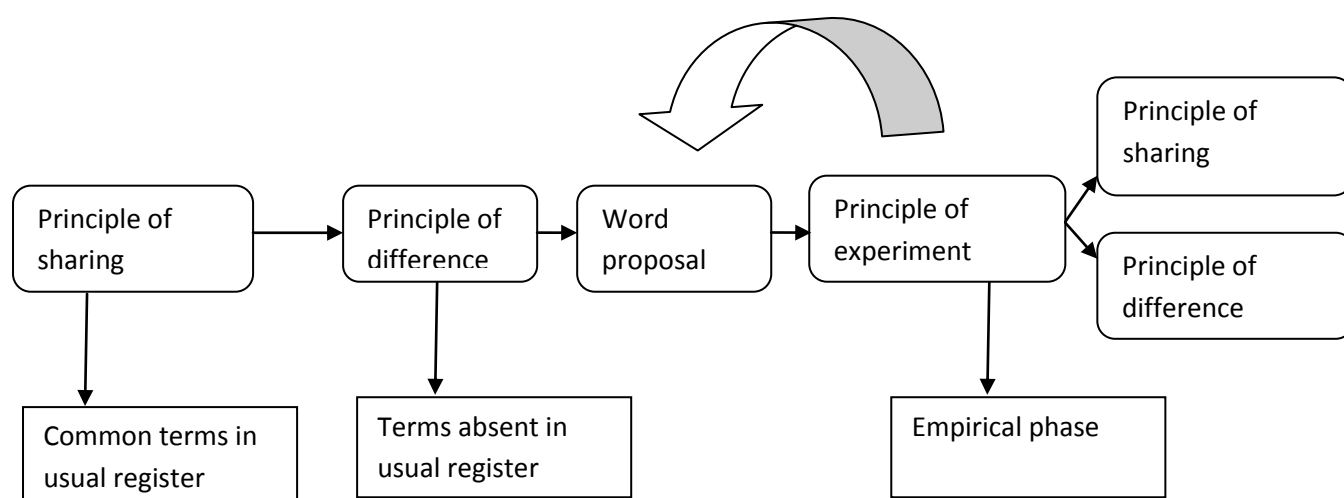

Figure 2: Instrumentation of the principles of democratic dialogue

Kreol: towards a continuum of use

As Sebba (1997) highlights, the borrowing of terms from either the lexifier language or another language present in the social ecosystem forms part of the mechanisms of lexical creation for pidgins and creoles. As mentioned above, this state is made possible and even facilitated by the eco(socio)linguistic dynamics of Mauritius. In other words, Kreol is not necessarily leaned towards neology, and forcibly 'neologising' the language will prove to be an 'unnatural' (eco)systemic intervention in the language, which can in turn have consequences on its use[67]. The coexistence of the three transcommunal vehicular languages has implications in the use of the language, and the process of loaning words can occur spontaneously in language use. Words like 'deal' and 'delete'[8] already exist in Diksioner Morisien in their original meaning; they are also pronounced in approximately the same way as in English. Some loanwords, depending on the degree of assimilation in the language, may not necessarily be written in the same way. Loanwords can be creolised, especially if they form part of the daily use of speakers.

---

[6] This raises the question of interventionism on language issues, and the consequences thereof. The ecological framework, for example, adopts a relatively cautious stance on this matter (Calvet, 1999), despite ontological difficulties. Studying language is in itself a form of interventionism.

[7] See also the case of the Caribbean and GEREC proposals above

[8] See also Lortograf Kreol Morisien (2010), section 5.5 for a rationale on why decisions were taken to keep loanwords in their original format (mainly because of their technical nature)

In the case where new forms are being proposed, it is therefore important to consider the scientific and mathematical reflection in terms of a continuum where the two poles are loaning and existing terms. This continuum will depend, among others, on the degree of vehicularity of certain terms (see below).

Figure 3: The continuum of use

Codification and guiding criteria

This work is focussed on a language which is in the process of standardisation: the official orthography document was launched in 2010. Therefore, it is important to take precautions relating to the codification of a Creole language, over and above the ideological issues mentioned above. For example, one of the principles to remember is that writing a language does not imply the reproduction of the oral form (Chaudenson, 2005). Another principle is to keep a level of simplicity and economy while reflecting on how to write the language (ibid.).

Moreover, another aspect to consider while engaging in such types of work is the set of criteria behind finding the right code: precision in definition, clarity, readability-'writability' and ease. The criterion of readability, for example, is an important one, especially if the target readers are taken into consideration. Tools which can be used to simultaneously pre-test and post-test reading ease are the Flesch Reading Ease (FRE) test and Flesh-Kincaid Grade Level (F-KGL).

FRE = 206.835 − 1.015 (Total words ÷ total sentences) − 84.6 (total syllables ÷ total words)

F-KGL = 0.39 (total words ÷ total sentences) + 11.8 (total syllables ÷ total words) − 15.59

Both formulae have the number of syllables and the number of words as important variables which directly determine the reading ease and accessibility of texts. For FRE, the result is proportional to the reading ease, with an indicative scale of 0.0-30 for low readability (best understood by university graduates), 60.0-70.0 for medium/normal readability (easily understood by 13-15 year olds) and 90.0-100.0 for high readability (easily understood by an average 11-year-old student). This criterion is also discussed by Chaudenson (2005) who evokes economy and simplicity as crucial when addressing the question of writing a Creole language.

Scientific words and phrases must also therefore be thought about by taking these criteria into consideration, along with the eco(socio)linguistic and practical criteria.

Categories of scientific terms

To proceed with the work, a list of mathematical and scientific (domain-specific) words and phrases will be taken mainly from primary textbooks of the Mauritian syllabus. Words/phrases from other sources were also considered for building a more varied corpus. After the constitution of the corpus, two main categories of scientific terms have been identified, depending on the trans-contextual (T/C) vehicularity.

The term T/C vehicularity is being used to denote the degree of penetration of scientific and technical terms in daily use, as shown in the diagram below.
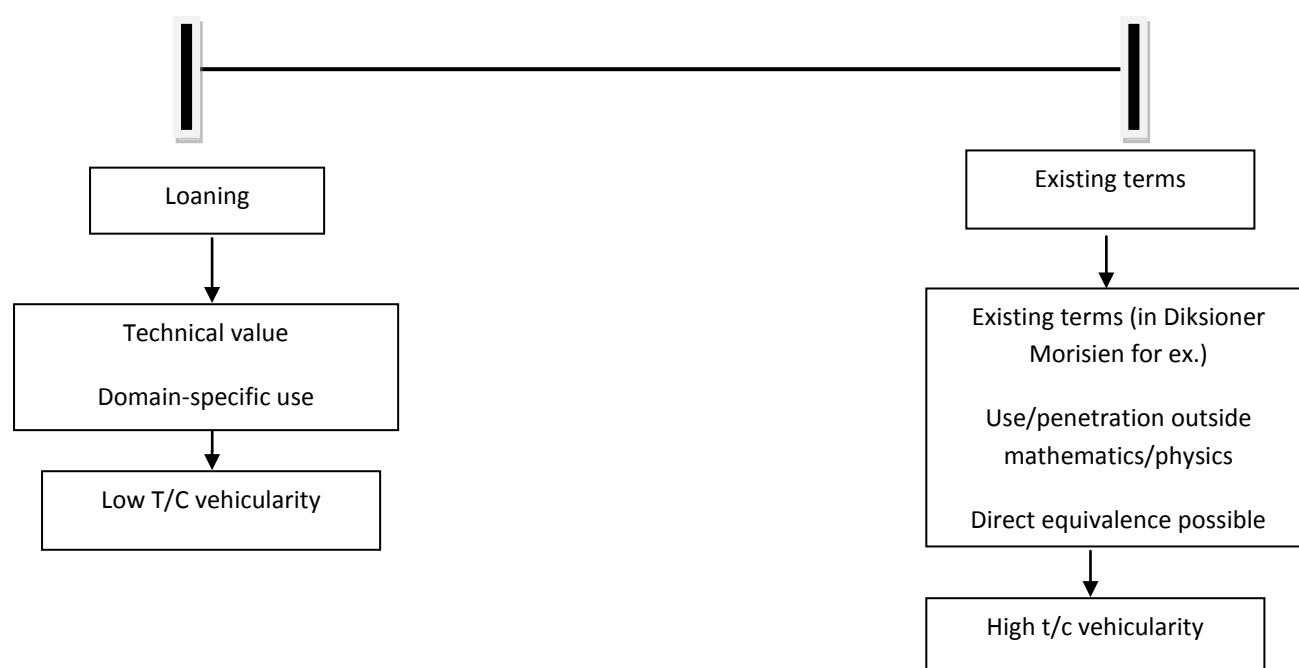

Figure 4: representation of T/C vehicularity with respect to continuum of use

For example, a term like 'perimet', a direct equivalent of 'perimeter', has a high degree of vehicularity because it is commonly used outside mathematics/science and is present in the dictionary in the original meaning (perimet). These words have a high degree of vehicularity because they are used outside the scientific/mathematical domains and are directly transposable in everyday life situations. Such words can therefore be used as they are to denote the same reference. Even though they have a scientific resonance, such words form part of 'normal' language use and are included in language dictionaries. Formulations which are also used in everyday life are also considered as having high T/C vehicularity.

Terms with low degree of vehicularity are used only in the scientific domain and have very little to no use in everyday language (common language). These words retain the technolectal dimension in the sense that their use is limited to their respective disciplines. A reflection is needed for the operationalisation of these words, starting with their position in the continuum, according to the various criteria mentioned above

A third category, which is also problematic, is the intermediate vehicularity zone. In this category, the question which emerges is whether, from a pedagogical perspective[9], it is better to use the term as a loanword, or to propose a Kreol equivalent. The consideration of reception tests therefore becomes important in this category.

In addition, certain words can have multiple meanings (polysemic) and will need further reflexion for operationalisation.

Method:

The approach in this work can be identified as being both onomasiologic and semasiologic in nature. As far as the study of words is concerned, onomasiology attempts to answer the question of how an idea is expressed; in other words, the idea/concept is taken as the starting point. On the other hand, semasiology takes the word as the starting point, and attempts to find ways of expressing the definition thereof. Our reflection will mainly be based on a list of existing words in English and/or French. The first step is to extract the meaning from the original word in the source language. The second step is to encode the concept in the target language by taking into consideration the ecolinguistic dynamics, pedagogical specificities and the guiding criteria mentioned above. The following diagram illustrates the abovementioned approach.

---

[9] During informal interviews with 10 primary school teachers, all of them stated that they use technical terms in mathematics and science as loanwords, with their original phonemic trait when explaining in Mauritian Kreol, even though equivalents can be proposed. Some examples are curve (possible Kreol proposal: 'kourb'), empty set (possible Kreol proposal: 'set vid'), factor (possible Kreol proposal: 'fakter'). Therefore, the question which emerges is whether to keep the terms as loanwords or to propose a Mauritian Kreol equivalent. In this case, a quantitative reception test may shed light on which direction to take.
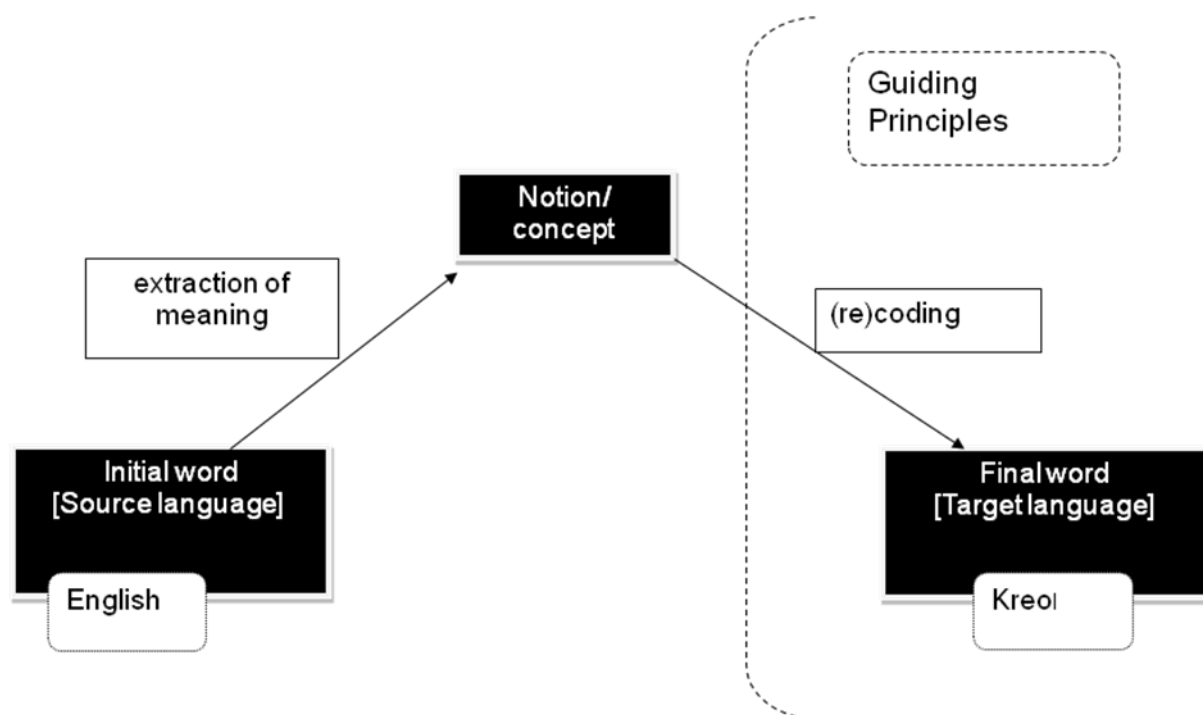
Figure 5: diagrammatic presentation of lexical decoding and (re)encoding process

A first translation was proposed and operationalised in the relevant context. The second list (with translated versions of words and phrases) was distributed to members of the mathematics and science department for a review process.

Mathematical terms and phrases

Word categories for mathematics

Green words: High T/C vehicularity [equivalents already exist in the dictionary/common use of language to denote same or similar reality]

Word/phrase in the source language	Word/phrase in the target language
Addition	Adision
Acute angle	Lang egi
Anticlockwise	Kont sans enn mont
Arc	Ark
Ascending order	Lord montan/
Average	Mwayenn
Calculate	Kalkile
Cardinal number	Nonb kardinal
Clockwise	Dan sans enn mont
Coordinates	kordone
Cylinder	Silenn
Decimal	Desimal
Digit	sif
Find the difference	Rod diferans
If-then statement	Si-alor
Magnitude	Magnitid
Mean	Mwayenn
Minus	Retire
Multiple	miltip
Ordinal numbers	Nonb ordinal
Parabola	Parabol
Pentagon, hexagon, heptagon,...decagon	Pentagonn, hexagonn, heptagonn, ...
Perpendicular	Perpandikiler
Plus	Plis
Polygon	Poligonn
Product	Prodwi
Quadrant	Kadran
Ratio	Proporsion
Rational	Rasionel
Solve	Rezoud
Take away	Pran/ tir
Trapezium	Trapez
What is the sum	Ki som
What is the total	Ki total..

Write in figures	Ekrir an sif / dan form sif
Intersection	Interseksion
Total cost	Kou total
Simple interest	Lintere sinp

Table 1: Mathematical high T/C vehicularity words

Red words: Low T/C vehicularity [highly technical; convergence towards conservation of original term, to be used as loanword]

Word/phrase in the source language	**Word/phrase in the target language**
Adjacent	Adjacent
Apex	Apex
Base (geometry)	Base
Cross section	Cross-section [lakoup transversal??]
Highest common factor	Highest common factor
Kite	Kite
Least common multiple	Least common multiple
Subset	Subset
Matrix	Matrix

Table 2: Mathematical low T/C vehicularity words

Blue words: Intermediate vehicularity [use of both forms {original loanword or new translated form} can be possible]

Word/phrase in the source language	**Word/phrase in the target language**
Axis (graph)	Axis/Lax
Curve	Kourb
Descending order	Descending order
Empty set	Set vid
Equilateral triangle	Triyang ekwilateral
Factor	Fakter
Median	Mediann
Mode	Mod (/mo:d/)
Right angle	Lang drwat
Right cylinder	Silenn drwat
Sector of a circle	Sekter enn serk
Segment of a circle	Segman enn serk
Set Union	Linion

Table 3: Mathematical intermediate T/C vehicularity words

Word categories for science

Green words: High T/C vehicularity [equivalents already exist in the dictionary/common use of language to denote same or similar reality]

Word/phrase in the source language	Word/phrase in the target language
Argon, boron, krypton	Argonn, Boronn, Kryptonn
As shown in	Kouma finn montre anba/dan
Atmosphere	latmosfer
Atom	Atom
Bacteria	Bakteri
Barometric pressure	Presion barometrk
Biomass	Biomas
Canned foods	Aliman/manze dan bwat/konserv ou konserv
Carcinogen	kanserizenn
Clay soil	(later) arzil
Contaminant	Kontaminan
Crawl	Ranpe
Density	Dansite
Diagram	Diagram
Disintegrate	Dezintegre
Displacement	Deplasman/ Displacement
Dissolve	Disoud/ fonn
Distance	Distans
Estuary	Estier
Fauna	Lafonn
Filtered and purified	Filtre ek pirifie
Fin	Nazwar
Flora	Laflor
Form	Form
Fossil fuel	Lenerzi fosil/ karbiran fosil
Germs	Mikrob
Give one other way to kill the germs in filtered water	Donn enn lot fason pou touy mikrob dan delo filtre
Habitat	Abita
Hazardous waste	Dese toxik
How each child is caring for his/her pet animal	Kouma sak zanfan pe pran so zanimo swin
I prepare two potted plants of the same type	Mo prepar/pran de plant dan po
Insects	Insek
It is a bad habit to talk while eating	Li pa enn bon labitid koze labous plin
Matter	Matier
Microbes	Mikrob
Movement	Mouvman
Nitrogen	Nitrozenn
Permeability	Permeabilite
Phase (moon)	Faz
Porosity	Porozite

16

Quantity	Kantite
Saturation	Satirasion
Sense organs	Organn sans
Speed	Vites
Sunlight	Lalimier soley
Surface water	Delo sirfas
Tail	Lake
Thermal power station	Stasion termik
Time	Letan
Twigs	Ti baton
Velocity	Velosite
Volume	Volim
Waste	Dese

Table 4: Scientific high T/C vehicularity words

Red words: Low T/C vehicularity [highly technical**; convergence towards conservation of original term, to be used as loanword]**

Word/phrase in the source language	Word/phrase in the target language
Inorganic compounds	Konpoze inorganik
Mass	Pwa /Mas
My ears are my sense of hearing	Mo tande avek mo zoreye
My hands are my sense of touch	Mo touse avek mo lame
Scale	Lesel
Sight, hearing, smell, taste and touch	Lavi, lwi, lodora, gou, touse
To scale	Eselone
Wind machines	Masinn divan

Table 5: Scientific low T/C vehicularity words

17

Taking into consideration the terms presented above, our first hypothesis (H1) is that words and phrases in the high T/C vehicularity category can be straightforwardly translated into the target language, and that it will be received without major concerns among users.

For both science and maths, most of the words are found in the high T/C vehicularity zone, implying that transposability is relatively easy. They are mostly present in Diksioner Morisien (2011) and/or can be directly integrated in the scientific domain.

However it has been noted that some terms require further reflection, in the sense that further investigation is needed in order to formulate a proposal:

1. Compound
2. Mass
3. My ears are my sense of hearing
4. Scale
5. Sight, hearing, smell, taste and touch
6. To scale

Compound

In the case of compound, the definition in the scientific domain may be problematic. A compound is defined as a 'pure chemical substance consisting of two or more different chemical elements'. The equivalent in French is **'composé'.** The equivalent is not present in Kreol. 'konpoze' as it is presented in Diksioner Morisien (2011) refers to the verb (konpoz lexame, konpoz lamizik). However the noun 'konpozision' refers to 'asanblaz bann diferan eleman pou fer zot vinn enn sel' (assemblage of different elements to form only one). This term bears a certain semantic proximity with the term compound [+ many elements] [+ assemblage] [+ unified form].

Therefore, one option is to keep the term 'konpozision' as it is used in Kreol. Another option is to use the form 'konpoze' as a noun as an equivalent for 'compound' specifically for the scientific domain.

Mass

The term 'mass' can be considered as another difficulty because of its meaning in the scientific, as well as in the mathematical domains. Mass denotes the amount of matter contained in an object and is independent of gravity; also it is measured in Kg. In contrast, weight is a force which is dependent on gravity

Weight (F) = ma, with m being the mass and a being the gravitational constant (for earth, this represents about 9.8 ms^2)

In common language interactions, however, 'weight' is used for 'mass'. In this case, 'mas' can be proposed for reference to 'mass', while 'pwa' can be considered as the corresponding

term for 'weight'. As with the difficulties with homonyms in general, however, 'mas' can be confused with the Kreol term 'mas' which means 'marijuana'.

My ears are my sense of hearing, my hands are my sense of touch

This sentence can be difficult to translate because of the syntactic structure. Lexically, the word 'sense' may also prove to be problematic. It can be translated as 'sans', with the meaning being the same as in English and French. However, equivalents of 'sense of hearing', 'sense of sight', 'sense of smell', 'sense of touch' and 'sense of taste' are not present in Diksioner Morisien. Expression in spoken Creole does not call for this sentence structure (common modes of conveying meaning are articulated in forms like 'mo tande avek mo zorey')[10].

In such cases, there can be two alternatives. The first one consists of proposing new terms. While 'lodora', 'gou', 'touse' can be straightforward, the equivalents of 'hearing' and 'sight' need more thought. In the case of 'hearing', one possible equivalent can be 'tande'. However, its verbal resonance is relatively significant (it can be difficult to decode 'mo sans tande'). The same reasoning applies to 'sight'. A possible equivalent can be 'vi' or 'lavi'. The former, however, refers to 'scenery' while the latter refers to 'life'. Of the two, 'vi' may appear to be the more appropriate as the decoding of 'mo sans vi' is less difficult than that of 'mo sans lavi'.

The second alternative consists of conserving the same structure as the oral aspect; instead of trying to find lexical equivalents of each item, it can be possible to focus on meaning transmission. Here, the global approach is favoured. For example, 'my ears are my sense of hearing' can be translated as 'mo tande avek mo zorey', which conveys approximately the same meaning (auditory discrimination through dedicated organs used to filter specific stimuli in the form of sound waves). From this perspective, communication fluidity can be maintained while simultaneously conserving most of the semantic weight. The same reasoning applies to other sensory permutations e.g 'my hands are my sense of touch' being translated as 'mo touse avek mo lame'.

Scale, to scale

Another term which is difficult to translate is scale, which is polysemic. In Creole, it can have multiple meanings. The following table illustrates some of the meanings it can take according to the context.

---

[10] See also Hazael-Massieux (1993(

Scale (noun)	Creole equivalent
(scale classification)	Barem
(scale as magnitude)	Inportans
(fish scale)	Lekay
(scale for measure)	Gradiasion
(scale to measure mass)	Balans
Scale	Lesel

Table 6: Possible equivalents of scale as noun

Scale (verb)	Creole equivalent
To measure	Mezire
To weigh	Peze
To scale (fish)	Tir lekay
To scale (Reduce/enlarge)	Diminie/agrandi Eselone

Table 7: Possible equivalents of to scale as verb

As it can be seen from the table, the word scale can be translated differently in Kreol according to the context, with relative ease. However, the definition of 'scale' and 'to scale' is problematic in one sense: 'a graduated range of values/ to a graduated range of values/ to a magnified state'. The French equivalent is straightforward: 'à l'echelle' and 'échelonner'. However, such a definition is not present in Diksioner Morisien. 'Lesel' refers to 'ladder'. It is possible to propose 'lesel' for scale. The difficulty may lie in the decoding process ('sa ti loto-la finn fabrike avek enn lesel 1:30'). The verbal form can be more problematic if we proceed by morphological derivation: lesel-eselone. However, the readability level is very low and it is a form which is not common in Kreol verbs. It is possible to propose another alternative: 'agrandi/diminie dapre proporsion' (depending on context) and 'fer/fabrike dapre lesel'. All the forms have to be tested for readability and ease of use.

Kite

Another word which can be problematic when translated in Kreole is 'Kite'. Geometrically, a kite is a quadrilateral whose four sides can be grouped into two pairs of equal-length sides that are adjacent to each other, as shown in the diagram below.
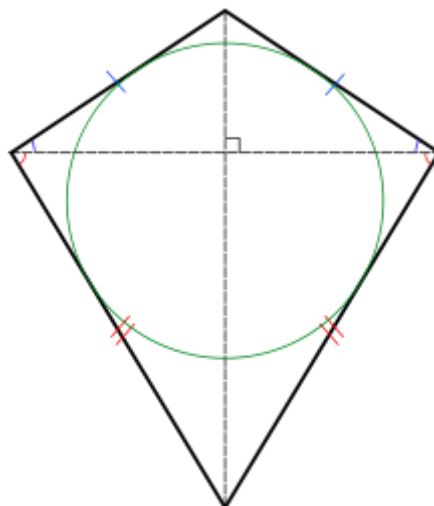

Figure 6: Geometric representation of a kite

As it can be noted, a kite has specific geometric properties which are generic to all variations of the shape. In this case, there are four possible ways of expressing the concept 'kite' in Kreol.

i. **Servolan:** in this case, 'kite' is translated by 'servolan', which contains 3 syllables. However, its meaning in Creole is confined to the 'aircraft' meaning. Modern kites take a variety of forms, which range from cubical to deltoid. Here, there might exist some forms of confusion when translating as such

ii. **Servolan zeometrik:** here, the word 'servolan' is maintained, with the addition of the adjective 'zeometrik', which explicitly denotes the geometric properties. However, the addition of a four-syllable adjective decreases readability and economy. To compensate, the adjective can be removed, therefore relying on the specific context (mathematics classroom). Nevertheless, the confusion factor might still be present

iii. **Kite:** in this case, the word is considered as a loanword from English. For example, an individual might say "Azordi nou pou etidie enn kite /kajt/". The English pronunciation will implicitly refer to the geometric kite; moreover, the monosyllabic nature of the word might increase its readability. However, the word might not be immediately decodable, especially due to the potential confusion with the verb 'kite' (to leave).

iv. **Kayt:** here, the above pronunciation and loan mechanism is conserved. The difference is that the word is written according to the Kreol orthography, in the same line as 'foutborl' or 'gorl'. However, the actual vehicularity and real penetration of the word is significantly inferior to the likes of 'foutborl', which are very much inscribed and assimilated to the language practice of Mauritians (hence the creolised form). In the case of 'kayt', such formulation might therefore not be appropriate.

Towards a democratic approach

Due to the nature of the above mentioned problematic words, a clear-cut decision cannot be imposed especially using a top-down approach. For this reason, we proposed to use a questionnaire which aims to provide further insight concerning the use of the terms. Moreover, this will also act as a reception test, regardless of the category of the words. In addition, this also corresponds to the principles of democratic dialogue, where the principle of experiment is being applied (see above). After this testing phase, it is also possible to observe the principle of experiment through pilot testing in schools.

Presentation of questionnaire

The necessity of a questionnaire emerged from the consideration of the problematic words, which called for an approach which converges towards democratic dialogue. The questionnaire mainly aims to gather the opinions of the major stakeholders – teachers – as well as teacher trainers. The list of English words, as well as a proposed Kreole version, was tabulated and the participants were asked if they agreed with the proposed equivalent. Another column is available for comments and/or alternative versions in case the respondents did not agree. This allows the observation of the principle of sharing, if the respondents share the same reflection around the proposed equivalents, and the principle of difference in case of diverging views. This will shed light on the final equivalents which we will propose, especially in the case of problematic words. However, it must be noted that only scientifically valid comments will be considered; moreover, variations in written form will not be considered because the proposed equivalents already respect the Mauritian Creole orthography (LKM)

20 questionnaires were distributed- of which 12 were analysed due to time constraints- to trainee teachers at the MIE (trainees from general purpose and Kreol), to lecturers from various departments (French, Mathematics, Science and Computer) and to primary and secondary school educators. As the research is focused on school practices, the participants were chosen according to their varying degrees of involvement in the education sector, beginning with trainee teachers and extending to primary educators, secondary educators and Mauritius Institute of Education lecturers. In the perspective of furthering the research[11], a larger sample will be chosen for the quantitative aspect, with respect to the triangle below, where questionnaires will be distributed to primary educators, secondary science educators, secondary mathematics educators, and members of the Mauritian public not involved in

---

[11] Projected for 2014

formal education. This will allow us to obtain different perspectives so that the data obtained can be relatively reliable.
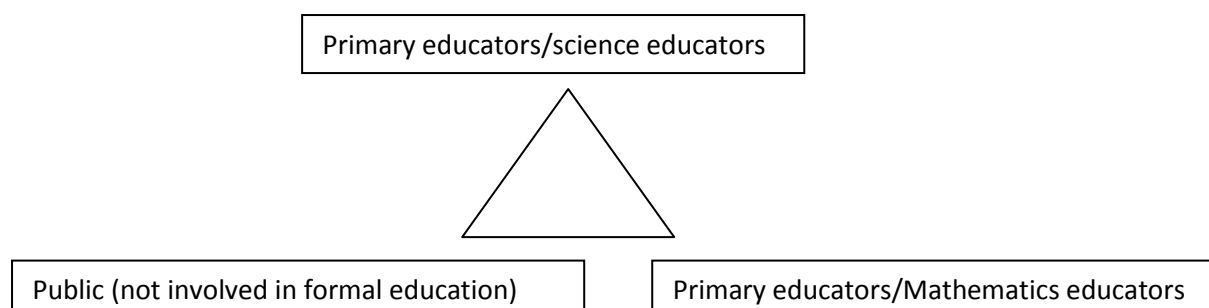

Figure 7: Representation of projected sample for larger study

In addition to the questionnaires, 6 informal interviews were conducted in order to obtain further feedback. As mentioned above, this research is a testing phase and the restricted number of participants, in any case, does not allow the results to be generalised. The questionnaire aims to study, in a prototypical perspective, how reception tests can be conceived and how the data can be used to feed back on the reflection process with respect to what is being proposed.

Limitations of questionnaire

A first set of limitations concerns the design of the questionnaire, as well as the time-frame. Overall, the questionnaire was relatively long and demanded investment in terms of time. Therefore, at least one week was given to respondents. Also, the space allocated for answers were relatively short, especially in case of lengthy comments.

Also, this research is limited to a testing phase; the sample of 12 respondents is insufficient for any form of generalisation. Moreover, it should be noted that a convenience sample was used for this part of the study. Thus, this research is mainly being used as an experimental platform in view of a larger project to be carried out in 2014.

Results and findings

The results of this study will be presented in a selective manner; only words with low T/C vehicularity - that is, words considered as 'problematic' -will be considered. However, we are not excluding other cases which may give rise to further reflexion. Moreover, the proposals were kept in their original form of writing, and may diverge from the official orthography.
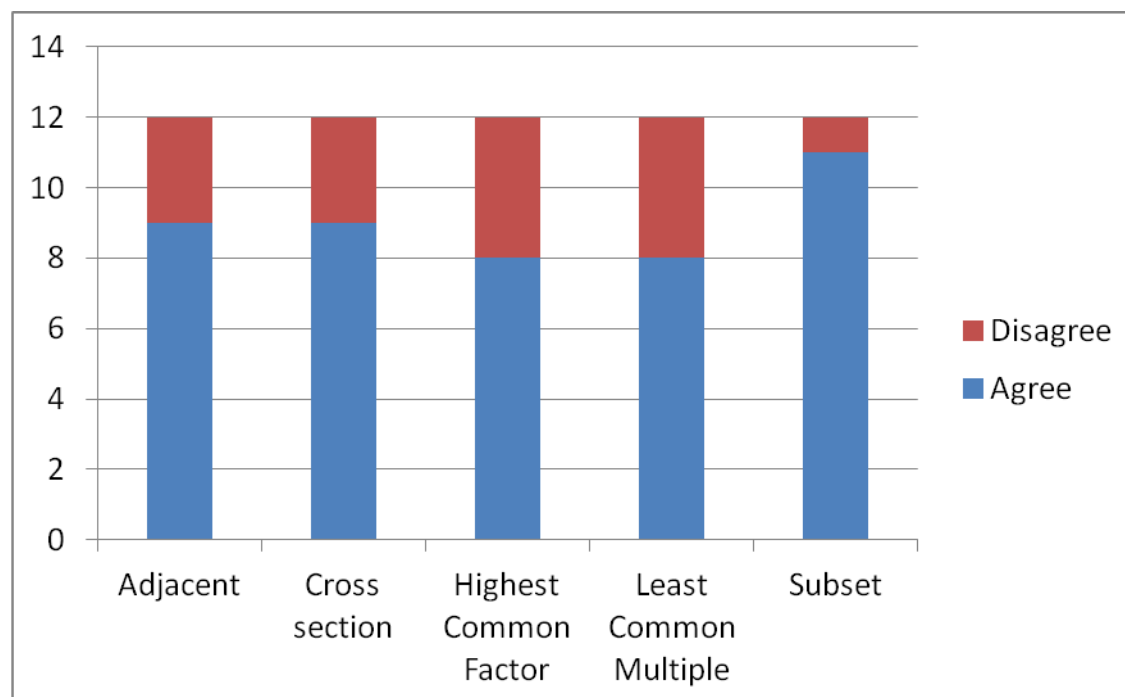
Choice of loanwords

Figure 8: Distribution of the choice of loanwords among respondents

As shown in the above diagram, the choice of loanwords is fairly important, especially in the case of low T/C vehicularity words. This partly explains the dynamic nature of the language, which is in permanent interaction with its external ecosystem, which feeds back on its internal ecosystem according to the needs of its speakers (Mufwene, 2008; Sebba, 1997). In other words, users borrow terms from other languages, like English in our case.

 Moreover, through the informal interview, the instrumental value of lexical items was brought forward. Respondents stated that the use of loanwords is particularly important from the pedagogical perspective in order to avoid potential cases of confusion, and to increase clarity. Through the use of what is common in the lexical repertoire of the learner, with respect to the other languages s/he is learning, and the 'source' language of the scientific/mathematical concepts, viz. English, it will be easier to explain concepts, according to respondents.

Homonyms identified as problem areas

Another set of facts which emerged from the empirical area concerned the identification of homonyms as problem areas. As mentioned above, in a hypothetical form, (see page 21), respondents considered the homonyms baz (for base) as being potentially difficult because it

can have other meanings in Kreol[12]. Likewise, lavi (for sight) can also be confused with 'life', which is pronounced and written in the same way. In this case, the absence of a linguistic context may also have led the respondents to identify the words as being problematic.

Other remarks from respondents

Respondents also proposed other forms, over and above those which were proposed in the questionnaires, as shown below:

1. **Other equivalents**
   In many instances, respondents proposed different equivalents with respect to the proposed term(s)

   Clockwise (dan sans enn mont)

         i.   Dan sans zegwi enn mont (1) [in the direction of the clock hands]

   In this case, the respondent added 'zegwi' (needle, corresponding to clock hands) in order to be semantically more accurate. The proposed equivalent considered that the meaning comprising 'needle' was implicit. However, zegwi, according to the respondent, adds explicit information in order to add clarity.

   It is a bad habit to talk while eating (Li pa enn bon labitid koze labous plin)

         i.   Li pa enn bon labitid cozer kan pe manzer (sic) (1)

   Here, the syntactic structure of the proposed equivalent is modified. The proposed version in the questionnaire can be roughly translated as 'it is a bad habit to talk with the mouth full', while the respondent's version is syntactically closer to the English version, with stress on the continuous action of the verb 'to eat'.

   If-then (si-alor)

         i.   Si-lerla (1)

   In this case, 'alor' is substituted by 'lerla', which can be considered as a more familiar version, with respect to language registers.

2. **Loanwords preferred over high T/C vehicularity words**
   In the following examples, some respondents chose loanwords in the place of the proposed equivalents, despite the high T/C vehicularity; this is against our hypothesis (H1) according to which high T/C vehicularity words would be straightforward for

---

[12] Place to hang out

respondents. This also sheds light on the language representation of users, and their personal stance on the matter involved, which can be equated to personal schema (Robillard, 2008a; 2008b; Jaccard and Jacoby, 2010)

Ordinal number (nonb ordinal)

  i.   Ordinal number (1; loanword)

Waste (dese)

  i.   Waste (1; loanword)

Clockwise (dan sans enn mont)

  i.   Clockwise (1; loanword)

3. **Remarks on domain-specificity and technical aspects of words**

Respondents also highlighted issues concerning the technical aspects of words. In the questionnaire, mean and average had the same translation (mwayenn), while the translation for ratio was 'proporsion'.

Mean and average have the same translation (mwayenn)

(i)   *Mean ek average toulede pa kapav ena mem tradiksion* [mean and average cannot both have the same translation]

As mentioned above, the same translation was proposed for mean and average (mwayenn). However, one respondent remarked that mean and average could not have the same translation. Upon further investigation and discussion, it was found that there was a hierachical type of relationship between mean and average, with mean being categorised as a type of average. This is useful in the eventual codification proposals of the two terms. For example, one can be kept as a loanword, while the other can be translated as mwayenn, in order to maintain transparency.

Ratio being translated as proporsion

(i)   *Si ratio so tradiksion proporsion, ki pou tradiksion proportion?* [if the translation of ratio is proportion, what will be the translation for proportion?]

In the questionnaire, the proposed equivalent for ratio was proporsion. However, one respondent remarked that ratio cannot be translated to proporsion because it would

conflict with the potential translation of 'proportion', implying that ratio and proportion are different concepts. While in linguistic interactions, the two terms (ratio and proportion) can often be used indiscriminately[13], they indeed have different meanings when used in domain-specific contexts. This therefore feeds back on the reflection around the proposal of new terms, in the sense that 'ratio' and 'proporsion' will have different meanings when used in mathematics.

Indeed, the terms 'ratio' and 'proportion' have different meanings in mathematical sense. In order to address this confusion in the translation of 'ratio' and 'proportion' in Kreol (proporsion), we need to investigate further to find a new equivalence of the term 'ratio' so that it is not confused with 'proportion'. We propose that 'proporsion' be used for the term 'proportion' and 'ratio' be used as loanword for the term 'ratio'. However, these translations are subject to further empirical testing. In this example, we see that the principle of experiment fed back on our reflection around potential terms to be proposed.

Limitations of the present research

As mentioned earlier, this research remains more or less *ad hoc*, in the sense that it has been carried out essentially at the MIE, even though efforts have been made to converge towards a democratic approach, notably through the questionnaire. Besides, this study did not intend to come close towards language planning, and only proposes lexical items which can be used for pedagogical purposes.

At the level of the questionnaire, another set of limitations can be observed. In the first place, no information was given on the fact that for multiple equivalents, the answers did not necessarily have to be mutually exclusive. Moreover, all the words in the original language were outside a text, and outside a context. Consequently, respondents experienced some difficulties, which can be noted in instances of homonymy and homophony: for example, the words below, which are written and pronounced in the same way, have different meanings in kreol and respondents often cited this specificity as a motive to agree or disagree:

> *Lavi*: sight, opinion, life
>
> *Baz*: base, foundations, place to hang out
>
> *Fakter*: factor, postman

Consequently, the choices of respondents were governed by the intrinsic polysemy of the above words. Providing a context where these words are used in a specific sentence would probably have avoided such a case.

---

[13] http://www.math10.com/en/algebra/ratio-proportion/proportion-2.html

Conclusions

This study confirmed that finding equivalents of technical terms in Kreol for English terms and concepts is a complex process. Several aspects must be taken into consideration: the language ecosystem, simplicity, ease of use and the representations/attitudes of users among others. As has been demonstrated, words which can *a priori* be considered as straightforward may have different meanings and implications when considered from the domain-specific perspective. Further precautions must be taken when the pedagogical dimension is concerned. As expressed by respondents, the reflection around the proposal of such terms and concepts should be clear and transparent, in order to consolidate their instrumental value. Finally, further reflection is required with respect to normalisation.

Further research

Further elements relating to language registers can be investigated in different ways. The list of words can be further extended to other domains (geography, history etc). Moreover, the proposed creole equivalents can be used to translate textbooks which can be used in pilot projects, at the level of implementation and/or testing in classes. This can be taken into consideration to further inform the reflection concerning language use.

References

Akademi Kreol Morisien, 2011, *Gramer Kreol Morisien*, Ministry of Education and Human Resources, Mauritius

Akademi Kreol Morisien, 2011, *Lortograf Kreol Morisien*, Ministry of Education and Human Resources, Mauritius

Attali, Jacques, 2002, « Géopolitique de la langue française » in *Le français, Langue du Monde* (Actes du Colloque «Le français langue du monde» - 19 et 20 mars 2002), Paris, OIF, L'Harmattan.

Bang, Jørgen Christian., and Døør Jørgen., (2007), *Language, Ecology and Society, a Dialectical approach,* UK, Continuum.

Boudreau, Annette., et al.., 2002, *Ecologie des langues – Ecology of languages, mélanges William Mackey - Hommage to William Mackey*, Paris, L'Harmattan.

Boudreau, Annette et al., 2003, *Colloque internationale sur l'écologie des langues*, Paris, L'Harmattan.

Byrne, David., 1998, *Complexity Theory and the Social Sciences, an Introduction*, London, Routledge.

Calvet, Louis-Jean, 1999, *Pour une écologie des langues du Monde*, France, Plon.

Carpooran, Arnaud, 2010, « Ethno-glossonymie et gestion des langues à Maurice », Télescope, vol. 16, n° 3, p. 157-174.

Carpooran, Arnaud. et al., 2007, *Appropriation du français et pédagogie convergente*, Paris, CPI, AUF.

Carpooran, Arnaud., 2003, *Ile Maurice: des langues et des lois*, Paris, l'Harmattan.

Carpooran, Arnaud. et al., 2007, Appropriation du français et pédagogie convergente, Paris : CPI, AUF

Carpooran, Arnaud., 2009, *Diksioner Morisien*, KTKL, Maurice.

Chaudenson, Robert, 2005 , « Description et graphisation : le cas des créoles français », Revue française de linguistique appliquée : les créoles : des langues comme les autres, vol. X-Fascicule 1, pp. 91-102

Cobarrubias, Juan, and Fishman, Joshua, (eds) (1983), Progress in Language Planning, Berlin, Walter de Gruyter.

Crystal, David., 2003, *Language Death*, UK, Cambridge University Press.

Deuber, Dagmar and Hinrichs, Lars, 2007, Dynamics of orthographic standardization in Jamaican Creole and Nigerian Pidgin in World Englishes Volume 26, Issue 1, pages 22–47, Blackwell Publishing, USA

Dewaele, Jean-Marc., 2001, « L'Apport de la théorie du chaos et de la complexité à la linguistique », *Revue La Chouette*, No. 32. Le Chaos, http://www.bbk.ac.uk/la chouette/chou32/Dewael32.PDF visitée le 14 Mai 2010 à 21 00.

Fill, Alwin and Mühlhäusler, Peter. (Eds.), 2001, *The Ecolinguistics Reader*, UK, Continuum.

Hazael-Massieux, Marie-Christine (1993), écrire en créole, oralité et écriture aux Antilles, Paris, l'Hamattan

Hookoomsingh, Vinesh, 2004, Grafi-Larmoni : A harmonized writing system for the Mauritian Creole Language, Mauritius, Ministry of Education.
Jaccard, James, and Jacoby, Jacob, 2010, Theory Construction and Model-building Skills, USA, The Guilford Press.
Migge, Bettina., Léglise, Isabelle. and Angela. Bartens, 2010, « Creoles in Education. A Discussion of Pertinent Issues », in B. Migge, A. Bartens & I. Léglise (coord), Creoles in Education: a Critical Assessment and Comparison of Existing Projects, John Benjamins, 1-30

Morin, Edgar., 1992, *Introduction à la pensée complexe*, Paris, Points.

Mufwene, Salikoko., 2001, *The Ecology of Language Evolution*, USA, Cambridge University Press.

Mufwene, Salikoko., 2005, *Créoles, écologie sociale, évolution Linguistique*, Paris, l'Harmattan.

Mufwene, Salikoko., 2008, *Language Evolution: Contact, Competition and Change*, UK, Continuum.

Robillard (de), Didier., 2008a, *Perspectives Alterlinguistiques, Volume 1 : Démons*, Paris : L'Harmattan.

Robillard (de), Didier., 2008b, *Perspectives Alterlinguistiques, Volume 2 : Ornithorynques*, Paris : L'harmattan.

Romaine, Suzanne, 1996, Pidgins and creoles as literary languages, in Hellinger et al (eds) Contrastive sociolinguistics, 271-290, Walter de Gruyter, Berlin.

Sebba, Mark, 2000, "Writing Switching" in British Creole. In K. Jones and M. Martin-Jones (eds.) Multilingual Literacies: Reading and writing different worlds, pp. 171-187. Amsterdam, John Benjamins.

Sebba, Mark, 1998, Phonology meets ideology: the meaning of orthographic practices in British Creole, Language Problems and Language Planning 22:1, 19-47, John Benjamins

Siegel, Jeff, 2005 Literacy in Creole and Pidgin languages in Current Issues in Language Planning, Volume 6, Issue 2 pp. 143-163, Taylor and Francis

Tirvassen, Rada, 2005, 'Le créole et l'école primaire mauricienne: faut-il relativiser l'eclairage offert par la sociolinguistique?' in *Le créole dans l'école : paroles nomades*. *Etudes Creoles*. Vol.XXVIII, N0.2, 2005. Pp.91-146.