**An ecolinguistics study of non-human animal representations in Mauritius: Towards an ecologically responsible model for education**

A thesis submitted to the University of Surrey for the degree of Doctor of Philosophy

Thesis submitted by:

Helina Hookoomsing

Institute of Education

St Mary's University, Twickenham, London

November 2020

# ACKNOWLEDGEMENTS

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Word count: 99,030

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**An ecolinguistics study of non-human animal representations in Mauritius: Towards an ecologically responsible model for education**

This study aims to explore the phenomenon of representations of non-human animals (NHAs) in children's literature in Mauritius and the English, French and Mauritian Creole (*Kreol Morisien*) curriculum materials, as well as the discourse of children in the first year of primary school and the discourse of primary level curriculum developers and textbook writers. Through the adoption of an ecolinguistics perspective, eco-critical discourse analysis (ECDA) and thematic analysis were used to investigate four data sets: (1) a random sample of nine children's books, (2) all the Grades 1 and 2 English, French, and Kreol Morisien textbooks, (3) group interviews with children in Grade 1 of primary school, and (4) accounts gathering with curriculum developers and textbook writers. Through the analysis of these four interwoven data sets, one of the key objectives was to reconceptualise ecologically responsible holistic education, within the holistic philosophy present in the primary school curriculum of Mauritius. The key findings show that the combination of cultural knowledge and first-hand experiences contributes to the development of empathy and caring attitudes towards NHAs, and that children do not have any intrinsic predisposition towards anthropocentrism, or speciesism; it is via cultural information and adult discourse that they develop these attitudes. Such information is transmitted multimodally, through verbal interactions, media, textbooks, and literature material. The study proposes an ecologically- responsible, anthropoharmonic, critically holistic, humane education (Eco-ACHHE) model as the main recommendation for transitioning the current local primary curriculum into a reformist one. The model is intended for use at a micro-level for teacher practice in primary school classrooms, meso-level teacher-training, as well as textbook writing in relation to holistic education at primary level, and curriculum development practices at a macro-level, in terms of national policy development. The Eco-ACHHE model can be used by stakeholders in education to construct their own awareness and that of their learners on the issues surrounding NHAs, but also to implement different types of anthropoharmonic, holistic and ecologically-responsible activities.

## 1    THESIS OVERVIEW: AIMS, OBJECTIVES, AND QUESTIONS

Human relationships with other animals, and nature in general, are many and complex. This thesis is written at a time of unprecedented ecological devastation, environmental degradation, and accelerated decline of the Earth's natural life (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019). The phenomenon of climate change is an escalating emergency in terms of not only global warming, but also global mass extinction of non-human species, and thus, the depletion of our **biosphere**.

> **Biosphere** is defined as all of the Earth's ecosystems considered as a single unit occupied by living organisms (Huggett, 1999).

We are currently living in a world experiencing unprecedented biospheric loss and depletion (Ripple et al., 2018).  The issues of climate change, global warming, wildlife protection, non-human animal (NHA) extinction, as well as the roles of human beings within this crisis, are represented in diverse ways in media and literature around the world. There are numerous scientific, ecological, and conservation policies and strategies being implemented globally, for example, the UNESCO Sustainable Development Goals is one such international programme (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019). Education and discourse regarding environmental and ecological matters require as much attention. They require attention in order to understand the contributions of formal learning and language towards constructions of knowledge and opinions about the environment, and also towards shaping the ways in which people interact directly and indirectly with non-human species and the biosphere. For example, while we cannot encounter NHAs directly through literature, we can find and explore representations of the imagined NHAs, and reflect on the possible consequences of these man-made imaginings for real NHAs and for our

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constructions of knowledge about them. Thus, this thesis aims to explore such connections between language, learning, culture, and representations of NHAs in children's literature and curriculum materials.

The research in this thesis took place in Mauritius. Mauritius, an island nation in the Indian Ocean, also faces issues of massive loss of biodiversity, some of the worst environmental degradation in the world, and issues of representations of the environment and of NHAs. It is therefore an important ecological context in which to carry out this research and gain valuable understandings into representations of NHAs. The focus is significant in general, given the current global ecological crises, and also in my thesis and the Mauritian context, for the education sector in particular.

In relation to the education sector of the country, Mauritius has been experiencing a national education reform since 2014, with the introduction of Nine Year Continuous Basic Education (NYCBE) since 2015. The national curricula of Mauritius, for pre-primary, primary, and secondary levels of education, include a holistic philosophy in the approach to teaching and learning, as well as adopting UNESCO Education for Sustainable Development (ESD) as part of educational goals for the nation. However, the curriculum materials for primary level in Mauritius, prior to the recent education reform, show that there is a divide between the biosphere and the **anthroposphere**.

> **Anthroposphere** is defined as the total human presence made and modified by humans throughout the Earth's system, including culture, technology, communication structures, built environments, and associated activities such as transportation networks, art, literature, and education (Kuhn & Heckelei, 2010).

This divide is noted in discourse that differentiates the human from 'nature', as though they are somehow separate from one another, rather than recognising that they are holistically

connected, and humans are dependent on natural systems. In Mauritius, for example, the divide is visible, ideologically, in the ways NHAs were represented in the pre educational-reform English and French textbooks (Oozeerally & Hookoomsing, 2017), which highlighted a need for more careful consideration of discourses used in the representations of NHAs and of ecological matters.

This thesis explores the representations of NHAs from an ecological, cultural, literary, and educational perspective in the context of Mauritius. The aim of this doctoral research extends from a focus on the phenomenon of representations of NHAs in children's literature in Mauritius and the English, French and Mauritian Creole (*Kreol Morisien*) curriculum materials, specifically the textbooks, for the first and second years of primary school, to the discourse of children in the first year of primary school, and the discourse of primary level curriculum/textbook writers. The perceived issue regarding representations of NHAs in Mauritius has been identified through observations and anecdotal evidence, as outlined below in section 1.4.

The inspiration for this thesis also stems from research carried out in 2014, exploring anthropocentrism and speciesism in primary school textbooks. The textbooks were analysed using an **ecolinguistic** approach, prior to the completion of the recent educational reform and production of new materials at primary school level in Mauritius (Oozeerally & Hookoomsing, 2017). Amidst the diverse terminological definitions, spanning from 'language ecology', 'linguistic ecology', and 'ecology of language', among others (Skutnabb-Kangas & Phillipson, 2008), ecolinguistics broadly studies the relationships between language and the environment.

> **Ecolinguistics** is a field of study in the social sciences and a branch of linguistics that has multiple definitions including the study of the ecology of

language, and the iterative interaction between human discourses and the natural world (Fill & Mühlhäusler, 2001).

The findings of a project exploring anthropocentrism and speciesism in primary school textbooks revealed a significant number of ideological issues regarding the ways in which NHAs were represented in the English and French language subject areas (Oozeerally & Hookoomsing, 2017). The ecolinguistic perspective of that research interested and motivated me to further my explorations in the Mauritian context. For this doctoral research, ecolinguistics will be used to centre the conceptual, theoretical, and methodological frameworks.

Ecolinguistics is a relatively new paradigm in language sciences. In this work, from the ontological point of view, the definition of environment will be aligned with that of Oozeerally (2015) which combines the view of Sapir (2001) and Skutnabb-Kangas and Phillipson (2008). This concept of environment integrates the topographical and geographical features of a country, including the flora and fauna, as well as the social dimension. Ecolinguistics is thus positioned as a set of theoretical and methodological principles at the centre of my reflections, and, at least partially, represents the point of articulation of my conceptual framework and the methodological approach.

## 1.1   Research Aims

The aims of this doctoral research are as follows:

i)   To explore the connections and relationships between NHA representations, children's literature and primary-school level curriculum materials (specifically textbooks). This exploration will be carried out via discourse and text analysis from an ecolinguistic and cultural perspective, to understand representations of NHAs in the Mauritian context.

ii) To reflect on and propose a model of curriculum material writing and development that integrates an understanding of NHAs, through an ecolinguistic lens, with a view to reconceptualising ecologically responsible holistic education, within the holistic philosophy present in the primary school curriculum of Mauritius.

This aim also extends to the development of teacher-training modules within primary level courses, including holistic education programmes, that integrate contextually and culturally appropriate information.

## 1.2 Research Objectives

The research aims are fulfilled through the following four research objectives:

1. Listening to children, in their first year of primary school, in relation to their experiences with NHAs.

2. Gathering accounts from primary level curriculum material/textbook writers and developers on their representations of NHAs.

3. Analysing children's literature and English, French and Mauritian Creole primary-school textbooks in the Mauritian context to explore representations of NHAs.

4. Proposing a model of curriculum material writing and development that integrates an understanding of NHAs within a more ecologically responsible framework.

## 1.3 Research Questions

As a result of these research objectives, the following research questions have been formulated:

1. In what ways are NHAs represented in children's literature in Mauritius?

2. How are NHAs represented in the curriculum textbooks for Grades 1 and 2 in Mauritius?

3. What are the relationships between NHA representations in Mauritius and an understanding of the ecosystem across the data sets?

4. What are the relationships between NHA representations in curriculum materials and culture in the Mauritian context across the data sets?

5. What model of curriculum material writing and development integrates NHA representations to cater for ecologically responsible education in Mauritius?

## 1.4 Relationship with the Subject Matter

This present research emerged primarily from my multidimensional experience, as a social being, as someone in the field of English language education and literature teaching, and as a curriculum material writer. It is necessary to begin this section with these reflexive statements in order to clarify how my own experiential pathway has led to the genesis of this work.

As a social being, I have observed in Mauritius, through actions and discourses of individuals in my surroundings, both academic and personal, that NHAs are often perceived as being symbolically significant. The symbols attributed to NHAs can often be negative, with discourse revealing that NHAs are considered inferior. In everyday language, NHA nouns are often value laden; for example, an ass is supposed to be stupid and lazy, and a pig is viewed to be dirty and greedy. In Mauritian Creole *lisien* (dog) and *move koson* (bad pig) are often used as insults.

As someone in the field of English language education and literature teaching, I have always been sensitive to the presence and depiction of NHAs in various texts, including different literature genres and school textbooks. **Anthropomorphism**, for example, is a matter of great interest to me, especially noting how it is present and visible in a variety of literature for adults and children (such as Beatrix Potter's stories, or those of Dr Seuss, and even the Harry Potter collection).

**Anthropomorphism** is defined as the attribution of human characteristics to non-human animals and things (Vogl, 1982).

Anthropomorphism is also visible in the curriculum materials of Mauritius, for example, in the primary school level textbooks and literacy materials. However, during my time in Mauritius, I have noticed certain patterns regarding the representations of NHAs, and how they were often represented either negatively, or solely as being useful to humans. These patterns were confirmed in a small-scale research project, where it was found that primary school language textbooks manifested a high degree of negative ideologies towards NHAs, and revealed common NHA stereotypes and arbitrarily 'negative' connotations (Oozeerally & Hookoomsing, 2017).

Likewise, I noticed similar patterns when I was part of the Foundation Year Project (FYP) for curriculum in Mauritius in 2013 and 2014, which aimed to provide primary school textbooks and curriculum materials to facilitate a smooth transition for children, from pre-primary level, into the first year of primary school. I witnessed how depictions of NHAs in textbooks represented a significant issue in the local landscape. In the 'Timatou textbook' (see Appendix A) for foundation year pupils (which is equivalent to Year 1 in the UK), the choice of certain NHAs as characters for the literacy materials, and in the textbooks, was subject to significant ideological debate, and some NHAs had to be removed or changed because they were predicted, or expected, to have certain representations that would be problematic (this is fully addressed below in section 1.4.1). Those experiences, which led to the identification of representational issues associated with NHAs, interested me to carry out this research.

To date, no research, except for a co-authored paper (Oozeerally & Hookoomsing, 2017), has been carried out in the Mauritian context to explore representations of NHAs in the education sector and the implications in the curriculum. The aforementioned peer-reviewed

research paper served as a stepping stone for further study. Given the limited research on this topic in Mauritius, this doctoral work yields the potential to contribute significantly to:

- the field of ecolinguistics;

- professional knowledge and pedagogical practice, including initial teacher training;

- existing knowledge but in a previously unexplored context;

- policy at a national level, as well as curriculum development practices in Mauritius.

### 1.4.1 The case of the Foundation Year characters: Timatou and Friends

In order to understand my relationship with the subject matter of this doctoral work, it is necessary to foreground the perceived issues regarding representations of NHAs in Mauritius, as have been identified through observations and anecdotal evidence from my involvement as a member of the committee working on a national educational project, the Foundation Year Programme (FYP). The FYP was a curriculum development idea aimed at facilitating the transition for learners from pre-primary to primary school. The textbooks and literacy materials that were conceptualised and written for the FYP were intended for first year primary school pupils. This significance of these textbooks in relation to representations of NHAs, and the notion of the integrated curriculum, are discussed in section 2.12.1 in Chapter 2.

There were two significant elements to these textbooks which had previously not been seen in Mauritius. First, that they were thematic and organised around four domains of learning: Language and Literacy Development, Personal and Social Development, Creative and Logical Thinking, and Health and Physical Education. Second, that they were bilingual material (English and French). Prior to this, all textbooks had always been written and organised according to subject area, and all were in English, except for the French and optional language textbooks. Ultimately, however, these major innovations proved to be difficult for the primary teachers to implement; due to a number of socio-cultural and political factors (Rughoonundun-

Chellapermal, 2017), some of which are discussed below, the FYP was scrapped after a year, and textbooks reverted back to subject areas as before.

I was a working member of the FYP committee and I wrote a short story about NHA characters playing hide and seek. At that point in time, I did not give the choice of characters much thought and opted for NHAs as I had been exposed to such characters in my own childhood and education. I had observed that these types of NHA characters were often present in picture books and early-reader types of story books. The 'hide and seek' story was proposed to the committee, and through discussions, the members of the FYP committee decided as a group that the characters should be those of NHAs that are present in the Mauritian landscape, and should be given whimsical names that would not carry ethnic community connotations. This was the first instance when I observed the direct influence of Mauritian culture on representations of NHAs.

There were lengthy discussions which spanned several weeks. The main points of discussion were:

- whether or not the characters reflected those in existence locally and in the nearby island of Rodrigues, which forms part of the Republic of Mauritius,
- if they were familiar enough for children to identify and name,
- if there could be any offence to the ethnic communities in Mauritius,
- what their character names should be.

The decision was eventually taken, by the FYP committee, that the characters (see Figure 1 below) would not only be in the story I had written for the 'big book' (i.e. an A1 size illustrated storybook) to accompany the main textbook, but that the characters would also be present throughout the textbooks themselves. The characters would function as visual support and educational 'friends', accompanying the learners through the various activities, via

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pictures, rhymes, direct questions, recap sections, short texts within the textbooks, and character speech bubbles providing information. However, due to external pressure from various stakeholders, some of the characters were changed. One was changed prior to the final publication of the materials, and two were changed immediately after publication. The table below documents these changes and the reasons for them, based on a reflexive account of my first-hand experience and involvement.

**Figure 1**

*Foundation Year Programme – Timatou and Friends Original Characters*
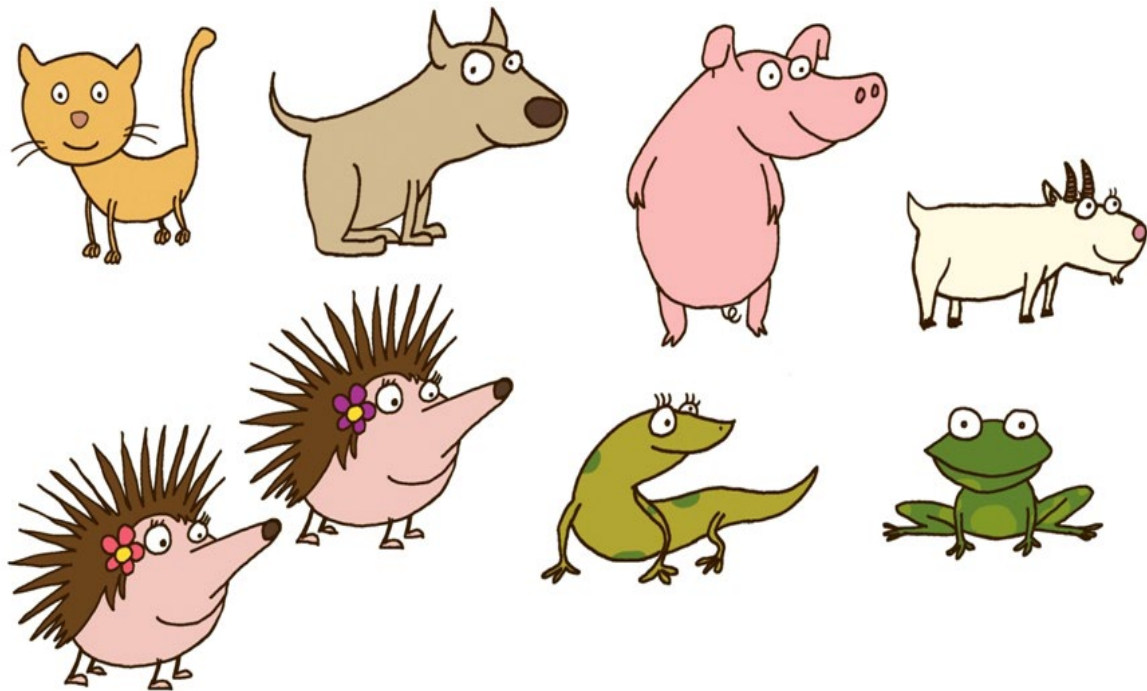
**Table 1**

*Timatou and Friends Characters and Changes*

| Character | Animal | Gender | Change | Timing of change | Reason for change |
|---|---|---|---|---|---|
| **Timatou** | Cat | Male | - | | |
| **Bo** | Dog | Male | - | | |
| **Capri** | Goat | Female | - | | |
| **Loli** | Gecko (lizard) | Female | - | | |
| **Fifi and Fidou** | Tenrecs | Female (twins) | Changed into tortoises | Post-publication | The Minister of Education, at that time, received a complaint from an unknown group, who suggested that the NHAs are dirty and, because the NHAs are eaten by a specific ethnic community in Mauritius, these characters should be removed or replaced. |
| **Patchou** | Pig | Male | Changed into a Pink Pigeon | Pre-publication | A suggestion was made to the FYP Coordinator that this NHA character could, potentially, upset the Muslim community and it would be best to avoid such possible issues. |
| **Polka** | Frog | Male | - | | |

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## 1.5  Research Purpose and Rationale

This doctoral research emerged primarily from my multidimensional experiences and reflexivity. As foregrounded in section 1.4, my involvement in the Foundation Year Programme (FYP), and witnessing, first-hand, the various character changes that took place in the books, and the socio-cultural factors that contributed to the changes, triggered my motivation to engage in this exploration of representations of NHAs in the Mauritian context. My involvement as a curriculum materials writer in Mauritius necessitates a highly reflexive approach to the research, and the study focuses on the recently reformed primary education sector, especially with regard to the connections and relationships between language, ecology, culture, and representations.

My involvement as a doctoral level researcher and curriculum materials writer in Mauritius yields the potential to contribute to an expansion of knowledge in the field of ecolinguistics as well as to professional knowledge and practice for initial early years teacher-training in Mauritius. This thesis will also contribute to existing knowledge in education and curriculum development by providing insights into the previously unexplored Mauritian context. Mauritius is a multicultural context, with no indigenous cultural heritage, and a cultural legacy that developed directly from and due to colonialism. Colonialism is a fundamentally capitalist movement, and, in Mauritius, it was specifically for exploiting nature and the ecosystem as resources for human use and consumption. This doctoral work also provides a possible opportunity to inform policy and practices at both an institutional level, for the organisations involved in curriculum development and material writing, and at a national level, for ecologically responsible holistic education in Mauritius. As the Mauritian National Curriculum Framework (Ministry of Education, Human Resources, Tertiary Education, and Scientific Research, 2016) includes the notion of holistic education, the aims and objectives of this thesis provide a pathway for a re-conceptualisation of holistic education towards the

inclusion of more ecologically responsible discourse and approaches within the holistic philosophy present in the national curriculum policy documents.

Representations can influence and shape the beliefs and/or ideas of an individual or a group. Thus, NHA representations in children's literature in Mauritius and the primary school English, French, and Mauritian Creole textbooks, act as potential vectors or modes of transmission towards developing ideological postures about the NHAs that are represented. Representations can "sometimes call our very identities into question. We struggle over them because they matter – and these are contests from which serious consequences can flow. They define what is 'normal', who belongs – and therefore, who is excluded" (Hall 1997, p. 10). Thus, the ways NHAs are represented in the aforementioned texts yield the potential to have direct or indirect impacts on the beliefs, ideas, opinions and understandings that people have, and how they act towards NHAs. This impacts on children in particular, as they learn and assimilate the representations from a young age.

These representations also influence what is included as 'normal', and taken for granted as such, as well as what is excluded. This was visible in the case of excluding Patchou (pig), and Fifi and Fidou (tenrecs) (see Table 1 above). In excluding these NHA representations, they are excluded from the literacy books and textbooks. As a consequence of this, they are excluded from a portion of the children's learning in school, from what is understood as 'regular' and accepted for children's learning in school, and what are 'regular' and accepted representations for Mauritius.

Through the first-hand experiences described above, it became clear that representations of the NHAs in the FYP curriculum materials called into question the very nature of the Grade 1 education reform, what was sanctioned as suitable for learners and what was rejected. Through rejection of certain characters, such as tenrecs and a pig, these NHAs

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are thus removed from the school lives of the children. The main cat character of Timatou was also criticised for his name on two levels. Firstly, 'matou' in colloquial Mauritian Creole means a large male cat, whereas 'ti' means small, thus, some teachers perceived the name as being an oxymoron and found it inappropriate. Secondly, 'matou' in Mauritian Creole slang can be used as a derogatory term for a very large, often obese, person. The role of language and culture also becomes significant here as the cultural context of Mauritius shapes representations and how these representations are articulated.

Culture forms part of representations and meaning making (and vice versa), and cultures are an inherent part of the anthroposphere; it contributes to and shapes the way we think about everything and how we thus act in relation to the world around us. This research therefore raises awareness of discourse about NHAs, and ecologically responsible discourse and thinking for the primary education sector, especially with regard to holistic education at primary level.

In relation to this thesis, representations (inclusive of language) of NHAs in Mauritius reflect powers of inclusion and exclusion and produce culturally, context-bound meanings about the nature and value of the NHAs being represented. Hall (1997) describes the politics of representation as the effects and consequences that representations have within a cultural and even global context. His approach:

> *examines not only how language and representation produce meaning, but how the knowledge which a particular discourse produces connects with power, regulates conduct, makes up or constrains identities and subjectivities, and defines the way certain things are represented, thought about, practised and studied.* (Hall, 1997, p. 6)

There is an added layer of complexity to this in the Mauritian context where there is no clear grasp of the concept 'culture'. The local landscape is characterised by multiplicity and diversity, which is further discussed in Chapter 2. Insights gathered through this doctoral research provide avenues for informing not only curriculum and material writing, but also teacher-training at the level of module conception and content design, for pre-primary and primary level courses.

### 1.5.1 Mauritius: History, Context, and Crisis

To understand the context of this research carried out in Mauritius, it is important to have an overview of the historical, socio-cultural, and political background of the nation. Mauritius is an island in the Indian Ocean, located off the southeast coast of Africa (Selvon, 2012). It is officially known as the Republic of Mauritius, and together with the islands of Rodrigues and Réunion, it forms part of the Mascarene Islands. The island had no indigenous population when discovered by the Portuguese in the early 16$^{th}$ Century (Toussaint, 1972), and was uninhabited when Dutch settlers established a small colony in 1638, which they eventually abandoned in 1710. Unlike many other colonised nations with indigenous peoples who have strong historical and ancestral bonds to the land and environment, I put forth the argument that this non-existence of an indigenous human population in Mauritius could account for the lack of strong heritage and ancestral ties to the island and its ecosystem, which potentially impacts on representations of NHAs.

Following the Dutch invasion, Mauritius then became a possession of France for approximately one century. The French expanded the sugar industry and turned the island into a prosperous French colony. This period was followed by an invasion of British troops in 1810 and the establishment of British colonial rule until 1968 when the nation gained its independence, eventually becoming a Republic within the Commonwealth in 1995 (Selvon, 2012). Mauritius has a population of approximately 1,265,577 (Statistics Mauritius, 2011) and

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has been formed by waves of migration since the island was first discovered; colonial rule, from both the French and the British, has left its legacy in Mauritius.

The country has been marked by slavery under French rule, and the arrival of indentured labourers mainly from India during British occupation. Thus, the population of Mauritius is formed from diverse migrations, all of which arrived with the sole purpose of exploiting the land. This heritage of ecological exploitation has shaped the socio-cultural dynamics of Mauritius, and partially accounts for the ecological devastation and ecocide that the island is experiencing now (see section 1.5.3). This historical background also forms an essential dimension to understanding the culture of Mauritius, and thus, the potential connection with representations of NHAs in the local context.

Between 1800 and 1900, some 450,000 Hindu and Muslim indentured labourers were brought to Mauritius from India (Bowman, 1991) and the late 19th Century to early 20th Century saw a substantial immigration of Chinese merchants and traders who eventually came to make up almost 3% of Mauritius' population (Eriksen, 1998). Mauritius achieved its independence by concession from the British in 1968, and based its structure of a multiparty democracy on the British Westminster parliamentary model. Since then, the country has come to be known as the 'rainbow' nation, often referred to as a 'multicultural' society unified in its diversity, which is a part of the government's official policy.

This somewhat potted history highlights, as noted above, how Mauritius has suffered in terms of biodiversity loss, due to the pervasiveness of capitalistic thinking, which was, at that time, fundamentally colonialist. All settlers, whether intentionally or forced, came to the country solely for the exploitation of the land and use of the ecosystem as 'resources' to be marketed and sold. This historical legacy of capitalist ideology continues to impact on the environment in Mauritius and, despite conservationist interventions and campaigns, the island

continues to face significant ecological damage as a direct result of human activities (see section 1.5.3). Thus, this doctoral research takes into consideration the historical dimension in order to understand the diversity inherent to understanding culture and the Mauritian environment.

### 1.5.2 *Languages and ethnic communities of Mauritius*

The 2011 Census identifies four ethnic groups in Mauritius, namely, Indo-Mauritians, Creoles, Sino-Mauritians and Franco-Mauritians (Central Statistics Office, 2011). The three main languages of English, French, and Mauritian Creole (Kreol Morisien or KM) are also clear expressions of Mauritius' colonial identity and legacy. In the education system, English and French are taught to Mauritian children from a very young age, with many learning the basics of each of these languages in the early childhood education setting before formal introduction to each subject area in the first year of primary school. Successive waves of colonial and post-colonial immigration have brought inhabitants who descend from geographically diverse origins; thus, new cultures, languages, and identities have been introduced into the Mauritian landscape, resulting in complex social dynamics and cultural heterogeneity. This is discussed in Chapter 2, where I explore the term 'culture' in relation to this research.

According to Bunwaree (2002), Mauritius is a plural society composed of many cultures which coexist, in a collage-like state, but which lack deeper levels of unity as well as social and cultural integration. The development of Mauritius as a post-colonial nation with no indigenous people could be a factor accounting for why there is no sense of a united 'Mauritian culture'. Maurer (2010, p. 56) reasons that "each community in Mauritius has to discover its true origin, its own genetic identity, and even their individual identity before reaching a national, unified Mauritian identity." Herein lies the complexity of understanding the terms 'culture' and 'identity' in Mauritius. Defining the term 'culture' has been essential for this

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research to explore the dynamics, connections, and relationships between NHA representations, as influenced by culture, and understanding of the biosphere in Mauritius.

### *1.5.3   Overview of Environmental Issues in Mauritius*

Moving from the geographical, historical, and socio-cultural, in terms of international relations, Mauritius prides itself on its memberships in international organisations and networks, such as the Commonwealth; the African Union; Common Market for Eastern and Southern Africa; *Organisation Internationale de la Francophonie*; Southern African Development Community; United Nations; and World Trade Organization. However, whilst Mauritius has a strategic location, geographically and within the socio-political sphere, this has not been done without substantial damage to natural habitats and the environment.

Mauritius is a nation that has experienced massive loss of biodiversity and extinction of a significant number of endemic species as a direct result of human activities. This stark fact reinforces the reason why the global crisis is a starting point for the reflections in this thesis. In fact, the once endemic bird, the Dodo, has become the global representation of extinction, leading to the idiom 'as dead as a dodo'. Some of the most noteworthy environmental issues that Mauritius faces are water pollution, degradation of coral reefs, extinction of endemic flora, and near-extinction of the Rodrigues fruit bat or golden bat. In addition to these environmental issues, only 9 out of 25 known species of indigenous birds remain in existence on the island, and less than 2% of the native forest remains. In fact, Florens (2013, p. 40) states that "Mauritius and Rodrigues are among the last places on earth to have been reached by humans and yet are also among the most ecologically devastated."

These stark facts and statistics may seem shocking for such a small island of only 1865km², but Mauritius is experiencing bio-depletion, gross ecosystem decline, biodiversity loss, and extinction similar to that which is being experienced on a mass scale around the world

(Crist, 2017). The necessity, then, for exploration of the interactions between humans and nature, NHAs, environments, and the ecosystem, as well as representations of such, becomes significant. This thesis recognises the importance of education in shaping interactions between humans and nature, and shaping the minds and ideas of young learners in relation to the biosphere and the Mauritius ecosystem, especially since Mauritius has included a holistic philosophy and Education for Sustainable Development (ESD) in a variety of direct and indirect ways in national curricula.

### 1.5.4    Environment issues and the role of education

Whilst education is a part of the anthroposphere, it is situated to play a momentous and vital role in bridging the ever-widening gap between the 'realm of humans' and the entire planet, inclusive of our most immediate ecosystems, and the larger planetary ecosphere. The role of education plays an essential part in how we learn about the world in which we live, and how this world is being affected by climate change and loss of biodiversity, such as NHA and plant extinction on an unprecedented scale.

Education is also a vector for developing knowledge and understanding in how to face or mitigate the challenges of such global catastrophes on micro, meso, and macro scales. Hence, the global turn towards Education for Sustainable Development (ESD), which aims to develop awareness and understanding of climate change and biodiversity so as to empower people, through quality education, to be responsible and respectful, and interact with and in a more sustainable world (UNESCO, 2018). Mauritius has also adopted the UNESCO Sustainable Development Goals (SDGs) in its curriculum reform, with ESD forming part of national level curriculum documents materials (Ministry of Education, Human Resources, Tertiary Education, and Scientific Research, 2016).

### 1.5.5 *The Education System of Mauritius*

This section provides a broad overview of the education system of Mauritius so as to provide essential background and contextual details to understand the primary school sector. The Ministry of Education, Human Resources, Tertiary Education, and Scientific Research (MoEHRTESR, henceforth referred to as Ministry of Education or MoE) oversees and manages the education system of the Republic of Mauritius. The education system has been shaped by both the French and British colonial rule, and has been influenced by a capitalist perspective of production and consumption. By this I mean that the education system of Mauritius is very focused on the importance of summative examination. The British education system continues to have a dominant and distinct presence in terms of national Cambridge Examinations.

The most recent major reform to the education system has been that of Nine Year Continuous Basic Education (NYCBE), which makes provision for basic education for all children to complete six years of primary, plus the first three years of secondary level schooling. Mauritius has provided a National Curriculum Framework (NCF) for Pre-Primary (MoE, 2010), Grades 1 to 6 (MoE, 2015), and Grades 7, 8, and 9 (MoE, 2016). These national policy documents establish the overarching totality of the aims and objectives to be realised for education, inclusive of expected Learning Outcomes, at each level of the system for learners in the Republic of Mauritius. The curricula for the pre-primary and primary school sectors also include the notion of holistic education, holistic development, and holistic learning.

Notably, this NYCBE reform began with a focus on primary schooling. With several years of producing the NCF concomitantly with the national primary textbooks (Grades 1 to 6) for use in all state primary schools, work was then started for the NCF secondary and textbook writing is still on-going for Grades 7 to 9. Meanwhile, reflections have only recently begun for reviewing the NCF Pre-Primary (MoE, 2010), which has not been reviewed since its publication.

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The complex changes to the National Curriculum in Mauritius have also influenced one of the purposes for this thesis. The reform at primary level has seen the introduction of a new NCF, new textbooks for every subject area, new literacy materials for the language subject areas, and new audio and digital materials. The Nine-Year Continuous Basic Education curriculum also adopts UNESCO's four Sustainable Development Goals (SDGs) in terms of inclusivity and equity, holistic development, lifelong learning, and quality education (MoE, 2015). In essence, the notion of holistic development, embedded within Mauritius' educational policy is particularly pertinent to this research in relation to human and NHAs, representations, and the research objective of proposing a more ecologically responsible holistic education in Mauritius.

## 1.6    Relevance of Research in the Broader Context

This research contributes to the broader context of knowledge for early years education, literacy, and textbooks. Children are considered as active meaning-makers who have the capacity to construct their own knowledge. This has direct impact on their behavioural patterns towards NHAs (Foucault, 2013, as cited in Stibbe, 2015). By exploring the connections and relationships amongst culture, discourse, representations of NHAs, ecology, and understanding of the biosphere, there is prospective opportunity for contributing to the broader context of primary level textbook and literacy development practices. The research explores both positive and negative representations raising awareness of representations of NHAs that can be not only ecologically irresponsible, but potentially ecologically harmful too.

By exploring this topic, this research contributes to reconceptualising ecologically responsible holistic education, that supports the notion of biosphere as inclusive of the anthroposphere, with the 'human' being an integral part of nature. This also functions as a way to rethink Education for Sustainable Development (ESD) that includes not only awareness of

the global climate change and environmental issues, but also the discourse and language used to discuss such issues, for example, rethinking conceptions of the environment and NHAs as 'resources' for human use. Insights gained from the Mauritian context could be used to develop more eco-critically aware ESD in the activities, exercises, and reading provided in textbooks, most notably for those materials geared towards early years' education.

## 1.7 Relevance of the Research to Initial Teacher-Training in Mauritius

This doctoral thesis explores the representations of NHAs in Mauritius so as to work towards a model of integrating ecologically responsible holistic education, that can potentially be used for initial primary school level teacher-training in Mauritius. In relation to the research aims, this is also relevant to conceptually resituate culture within a broader understanding of the ecosystem, going beyond the traditionally dualistic conception of culture versus nature; this could be applicable to both primary and secondary level initial teacher-training. An understanding of the ecosystem as inclusive of culture is not limited necessarily to just primary level teacher-training but could be used as a general broader reconceptualisation applicable to secondary level as well.

In current teacher-training practices in Mauritius, trainee-teachers are taught to deal with the concept of culture notably in their reflective and reflexive practices and assignments, as well as in content modules at undergraduate level, especially in language programmes. It is therefore important for trainee-teachers to understand how culture influences their language practices, their relationships with others, including NHAs, their linguistic and pedagogical choices when it comes to dealing with this topic, and the ecological responsibility in relation to culture as part of holistic education. Teacher training could then support trainee educators in developing cultural sensitivity to different representations. Teachers are an interface between curriculum and children, and thus in turn, a contributing factor influencing children's

constructions of knowledge. From the perspective of the need for ecological and ecolinguistic research in education and discourse, teachers need to be made aware of their own knowledge and beliefs such as those linked to NHAs and representations, and how such knowledge is 'transmitted' via curriculum frameworks and materials, and the ideologies associated therein.

Teachers carry their own socially, and culturally, constructed knowledge about NHAs, which influences their representations and discourse (Stibbe, 2015). Carrying out the research in the context of Mauritius provides an opportunity for developing teacher-training modules within primary level courses and programmes, including holistic education programmes, workshops, and course materials that integrate contextually and culturally appropriate information. This can, therefore, support primary school teachers in developing their own reflexivity and understanding of ecologically responsible discourse and activities. This could subsequently enable them to provide primary school children with ecologically responsible representations of NHAs and the biosphere.

In relation to teacher training for holistic education (HE), this doctoral research is also linked with the principle of **holism** which is central to holistic education.

> **Holism** is a term that embodies the notion of wholeness, the etymon being 'holos', which is Greek for 'whole' (McMillan et al., 2018).

The focus on holistic education for this thesis is based on two arguments one being conceptual and the other, practical. From the conceptual point of view, I argue that there are multiple levels of holism, which are mutually inclusive and co-dependent, which is an important consideration in conceptualising holistic education. For instance, a holistic conception of the child, as an active, social being, operating within a larger ecosphere, is dependent on a holistic conception of the different 'spheres', i.e. the anthroposphere and the biosphere. As such, the notion of biosphere includes that of anthroposphere, with the 'human'

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being an integral part of nature. However, the local as well as global dynamics, being heavily embedded within a dominant capitalistic ideology, indicates a scission between the anthroposphere and the biosphere.

From the practical standpoint, holistic education has been introduced in the Mauritian education system as part of the NYCBE reform, via a basic, if somewhat imprecise, holistic philosophy in curricula, and introduction of a teaching scheme of service and teacher-training courses. This policy decision created new teaching jobs and a scheme of work for 'Educators of non-core subjects' in the primary sector workforce, which led to the implementation of a corresponding primary level teacher-training course. This provides the opportunity to reflect on, devise and implement an ecologically responsible holistic education, that more accurately reflects the philosophy of holism. The second aim of this thesis (see section 1.1) explores the possibility of providing an ecologically responsible philosophy of holistic education in the curriculum, where the biosphere is considered as the 'whole' it is meant to be.

Hence, this doctoral research may also have ramifications in tertiary-level curriculum development, in view of implementing a holistic and eco-responsible philosophy at the heart of teacher-training. This will then have a potential impact on how children are taught at the level of primary schools in Mauritius.

### 1.7.1   *Relevance of research to first year primary school children in Mauritius*

For the children in the first year (Grade 1) of primary school in Mauritius, this research provides an opportunity to listen to and present their representations of NHAs, through data gathered from group interviews. Children's ideas about, preferences for, and opinions of NHAs have not been researched in Mauritius, to date. This research therefore explores the NHA representations of first year primary school children to gain insights into their discourse and constructions of knowledge about NHAs. This can potentially be useful for:

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- generating knowledge in the Mauritian context for reconceptualising an ecologically responsible holistic education, curriculum materials writing, and curriculum development aimed at children in the early years of primary school, and

- addressing culturally constructed ideological associations of NHA representations in Mauritius, to provide first year primary school children with ecologically responsible discourse in their curriculum materials.

The provision of ecologically responsible discourse could potentially help young children to develop ecologically responsible interactions with NHAs, and the biosphere in the broader sense. For example, the approach might help children treat NHAs with respect, to recognise the intrinsic value of NHAs and nature, and to not consider the earth predominantly as a source for consumption and exploitation.

### 1.7.2   Relevance of research to teacher-training in primary education

The ecolinguistic perspective of this thesis could inform primary level teacher-training in the broader sense of negotiating representations of NHAs in an era of education that aims to be more eco-responsible. Teacher-training is therefore an important dimension for drawing attention to ecological matters and ecologically responsible discourse. Primary level education is a fulcrum of formal instruction, and a formal space in which there is significant exposure to information and materials. When the information and materials concern NHAs, it contributes to form the representations of NHAs that children construct, and thus the representations act as vectors towards the construction of ideologies about the NHAs.

An eco-critical lens for discourse awareness and analysis can potentially support the Sustainable Development Goals (SGDs) which aim to develop awareness and understanding of climate change and biodiversity so as to empower people, through quality education, to be responsible and respectful, and interact with and in a more sustainable world (UNESCO, 2018).

This research is relevant to those UNESCO SDG conventions and recognises the significance of developing awareness of contextual and cultural specificities of representations of the environment and non-human species.

In terms of broader primary level teacher-training, the findings may be informative and useful for integrating eco-critical reflexivity with regard to teacher discourse and informing choices for learning and literacy materials in the primary and early childhood education sector. Additionally, in an era of multiple ecosystem crises, "the crisis worsens as fast as the incapacity to reflect on the crisis increases" (Morin, 2001, p. 35). This thesis intends to contribute a reflection on the crisis in the context of primary level education.

## 1.8    Chapter summary and structure of the thesis

This introduction has provided an overview of the contexts from which the thesis has emerged. The research aims, objectives, and questions were presented. A reflexive account of my relationship to the subject matter was provided that led to an explanation of the research purpose and rationale. This chapter discussed the context of the study and provided an overview of the historical, socio-cultural, and political background of Mauritius, as well as the languages and ethnic communities, environmental issues, and the education system of the country. This introduction also outlined the contribution of this thesis to the field of ecolinguistics and to the broader context of knowledge for early years education, literacy, and textbooks as well as to the more specific aspects of teacher-training in the Mauritian context, especially in the primary education sector and for children in the early years of primary school.

This thesis consists of six chapters. Following from this introduction, each chapter presents a critical exploration of representations of NHAs, and progresses cumulatively towards an understanding of the connections and relationships between NHA representations, children's literature, and primary-school level curriculum materials in the Mauritian context.

The theoretical framework for this study is principally founded on ecolinguistics and eco-critical discourse analysis.

Chapter 2 is the Literature Review and centres on the problematisation of key concepts in relation to the research questions and aims of the study. The critical discussions from this chapter feed forward to the construction of my theoretical and conceptual frameworks. Chapter 2 is broadly divided into three sections discussing the relationship amongst representations of NHAs in culture, children's literature, and education. The chapter also examines how language, as a cultural and conceptual mediator, plays a central role in not only transmitting and constructing representations, but also in how it 'forms' the objects of reference especially through symbolic constructions.

Chapter 3 outlines the key choices and methodological considerations of this study as well as elaborating on the rationale and structure for the methodology and methods adopted. It puts forward the ontological and epistemological posture of this research and positions the ecolinguistic perspective as a set of theoretical and methodological principles central for my reflections. This chapter draws heavily on the work of Stibbe (2015) as the anchor point to explicitly articulate the theoretical discussions in relation to the methodological dimension of the research.

Chapters 4 to 7 present the main findings and discussions of this study in relation to the research questions and the aims of the thesis. Each chapter is organised so that the results and discussions are presented together using a rhizomatic approach (Deleuze & Guattari, 1980) which allows for a nonlinear, non-hierarchical way to present the findings. Data was gathered in four sets (children's literature analysis; textbook analysis; children's interviews; and accounts gathering). Chapter 4 presents the results and discussions for Data Set 1: Children's Literature, Chapter 5 presents for Data Set 2: Textbooks, Chapter 6 presents Data Set 3:

Children's Interviews, and Chapter 7 presents the results and discussions for Data Set 4: Accounts Gathering. Eco-critical discourse analysis, inspired and adapted from the work of Stibbe (2015), was complemented by other lenses depending on the data sets, and included elements from literary theory for children's literature.

Chapter 8 is the conclusion of this doctoral thesis. The findings and literature review chapters are used to build towards the discussions in the conclusion. This chapter presents a reflection and proposes a model of curriculum material writing and development that integrates an understanding of NHAs, from an ecolinguistic lens, with a view to reconceptualising ecologically responsible holistic education, within the primary school curriculum of Mauritius. The discussions in this final chapter also relate to the aim of developing teacher-training modules within primary level courses, including holistic education programmes, that integrate contextually and culturally appropriate information.

The following chapter foregrounds the research with a detailed literature review that explores the central role of language and discourse in transmitting and constructing representations of NHAs and the biosphere in culture, children's literature and education.

## 2 INTRODUCTION AND OVERVIEW

This chapter centres on the problematisation of key concepts in relation to the research aims and research questions, which will feed forward to the construction of my general theoretical and analytical framework. The literature review is broadly divided into three sections discussing the relationship amongst representations of NHAs in culture, children's literature, and education.

I begin with a discussion on the concept of culture and how it fits into my reflection on the relationship it nurtures with representations of NHAs. I then focus on how language, as a cultural and conceptual mediator, plays a central role in not only transmitting and constructing representations, but also in how it 'forms' the objects of reference, especially through symbolic constructions. As my focus is NHAs, I subsequently discuss how they have been traditionally defined from the lens of Cartesian dualism, a posture which is pervasive in various types of texts and discourses, including those belonging to the religious dimension. I then move to a brief overview of anthropocentrism and speciesism as ideological standpoints, in opposition to the notion of Cartesian dualism. Anthropomorphism is then discussed, especially regarding its presence among children-related media and literature. The final section of the literature review discusses representations of NHAs in curricula and education, especially in relation to Holistic Education which was introduced as a concept in section 1.7.

## 2.1 CULTURE AND NON-HUMAN ANIMALS

This first section of the literature review begins by discussing the term 'culture' from an anthropological perspective. It is a term that is vast and difficult to define; it merits deeper reflection as the cultural aspect of the Mauritian context is significant in relation to the aims

and research questions of this thesis. Though it has been regarded by many scholars as a notoriously difficult concept to define, with little to no agreement amongst anthropologists with regard to the nature of culture (Apte, 1994), it is a term that requires a clear, concise and detailed definition in order to be able to draw more reflective and analytical understandings of the representations of NHAs that are intrinsically linked with and within the specific landscape of the Mauritian context. This section of the Literature Review will create a working definition of the term so as to provide an understanding relevant to the Mauritian context and the implications with regard to the purpose of the thesis.

The centrality of the notion of culture in this research follows two main lines of reasoning. First, the problematisation of culture as an important node, a junction of sorts that is placed as a connecting point for my arguments with respect to other concepts listed below which, at least partially, gravitate around the cultural dimension:

- Language

- Ethnicity

- Ideology

- Representations

Secondly, culture forms part of the complexities of the local landscape, especially taking into consideration the ethno-cultural heterogeneity prevalent in Mauritius (Carpooran, 2003; Oozeerally, 2015). It is therefore important to allocate reflective space to this intrinsically problematic notion before going further in defining, and constructing, my conceptual understanding of the aforementioned elements of language, ideology, and representations, which are all key concepts exercising influence on my construction of the conceptual and theoretical frameworks of this study.

The general anthropological view, whereby culture is everything which is not nature, is also particularly problematic. It is fundamentally a dualistic posture, which is later discussed in section 2.3, and excludes nature from all cultural considerations. While this perspective will be excluded for the subsequent construction of my conceptual framework, it is useful in analysing the relational dynamics of the Mauritian participants with respect to NHAs, as certain behaviours can be attributed to a general dualistic anthropological stance.

## 2.2 EPISTEMOLOGICAL AND THEORETICAL ELEMENTS IN THE CONCEPTION OF CULTURE

Morin (2000) analyses the concept of culture from a complexity-driven multidisciplinary lens, combining sociology, anthropology, cultural studies, and philosophy. According to Morin (2000), the term culture is specific to human societies and encompasses the collective entirety of knowledge, learned skills, experiences, memories, and beliefs of society, which he terms as collective cognitive capital. From the level of the collective cognitive capital and consciousness, culture creates and organises, and is created and organised, via language. Thus, Morin (2000) views culture as the cognitive vehicle – acquired knowledge, lived experiences, historical memories, and mythical beliefs. Depending on its cognitive capital, culture determines rules and norms that organise society and determine individual behaviour. Thus, culture is neither "super-structure" nor "infrastructure" (Morin, 2000, p. 74). Culture and society are in a mutually generating relationship and culture is presented as a "cognitive machine" (p. 74). Culture then, is a complex whole with a form of recursion between the parts and the whole, and "… culture can only exist through cultures… [and] constitutes the social heredity of humans…" (Morin, 1974, p. 18; my translation from French).

Building on these notions of culture as a cognitive machine and complex whole, inclusive of unity and diversity, a starting point in my reflection around a contextualised

perspective on Mauritian culture is provided by the intermediate definition used in social psychology: "Culture is the fundamental schema, the reading grid, the system of meanings shared by a group of humans, that allow an individual to interpret the symbolic meaning of human behaviour, and therefore to construct his/her own behaviour" (Clanet, 1993, as cited in Blanchet, 2012, p. 132; my translation from French). In this context, culture is perceived as a fundamental aspect in the way humans process and interpret socio-semiotic data especially with respect to behaviour. Culture is the mediator between socio-symbolic meaning and behaviour construction.

Clanet's (1993) view of culture is particularly pertinent in the context of this research as it gives insights into the human and non-human relational matrix through the integration of the social and semiological dimensions of behaviour construction. However, while this definition based upon cultural schema theory appears to be scientifically valid (Garro, 2000; Lipset, 1993; Nishida, 1999; Sharifian, 2008; 2011), the question of culture is made more complex in the Mauritian context.

Many researchers have proposed that the understanding of social phenomena in the Republic of Mauritius is deeply rooted in ethnic relations (Bowman, 1991; Carroll, 1994; Eriksen, 1998; Simmons, 1982). Bunwaree (1996, p. 24-25) argues that "[Mauritius] accepts culture from almost all corners of the globe but does not have a Mauritian culture". According to Bunwaree (2002), Mauritius is a plural society composed of many cultures which coexist, in a collage-like state, but which lack deeper levels of social and cultural integration, resulting in a fragile nation which conveys an impression of interculturality but lacks a true sense of 'Mauritianess' (Dubey, 1997).

Interculturality, in this sense, refers to a societal structure that involves mutuality, reciprocal relationships and deep interaction between different 'cultures' learning to be a

community together. This is in opposition of a structure of multiculturalism which is tolerant of cultural distinctions and encourages living alongside one another peacefully without the element of reciprocity and integration (Palaiologou & Dietz, 2012). I posit that language and culture share a co-determining and recursive relationship, meaning they share a relationship with permanent feedback and transformation. Such a relationship is fundamental in conceptualising the relational dimension between humans and NHAs.

### 2.2.1 *The centrality of language in conceptualising culture*

While some researchers attempt to conceptually separate language and culture (Risager, 2006), the consensus among linguists appears to be in favour of an inclusive view. According to Blanchet (2012) for example, language and culture are inextricably linked. Language is not limited to the union of the signifier and signified; it is a specific analysis of reality which is the basis of communication. Language is in culture, which is in language, thereby manifesting a form of holographic relationship (Morin, 2008). According to Morin (2008), a hologram is a type of image where parts are contained within the whole which is contained within the parts.

This perspective is particularly interesting in the case of my research as it allows the construction of conceptual bridges which articulate forms of ideology like anthropocentrism and language; this corresponds to the stance that any form of ideological element is part of the collective cognitive capital manifested through language. To further substantiate the above statements, this research shares the view that language is fundamentally a cognitive-cultural vehicle (Morin, 2008). At a more local level, it is also a cultural mode of being, often regulating and co-determining the relationships between humans and non-humans (Stibbe, 2015).

From a more 'empirical' standpoint, language is what articulates the experience, representations, and knowledge of the participants, and the interpretations of these experiences. Stibbe (2015, p. 3) uses the general concept of 'stories' to articulate the lived anthropo-cultural

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experiences of humans in relation to ecology. He proposes eight forms of stories and their linguistic manifestations. These different forms and manifestations of language, which may be in either the graphic-textual form of books (e.g. children's literature) or even in the oral-phonological and discursive forms (via opinions and accounts of representations), are detailed in Chapter 3. Language is, in such a way, argued to be the bridge between the 'cognitive machine' and ideology, with anthropocentrism being one of the major forms of ideology (see section 2.5 below).

### 2.2.2   Culture, symbolic forms, and non-human animals

In order to further underpin the co-determining and recursive relationship between language and culture, and language as the cognitive vehicle through which culture creates and is created (Morin, 2000), it is necessary to examine the notion of the symbol (Geertz, 1973) which is essential to both concepts of language and culture. A symbol is typically a material object which represents something else, usually something abstract; a culture is an interworked system of symbolic forms, based on a common shared set of symbols and meanings such as language, material objects, art forms, ritual practices, ceremonies, and informal practices such as nonverbal communication, stories, gossip and so forth.

It is through these symbolic forms that people experience and express meaning, and very complex and loaded understandings can be encapsulated in the symbol. Thus, the concept of culture is a pattern of meaning making transmitted historically and is "a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and attitudes toward life" (Geertz, 1973, p. 89). For example, to a North American or European, the Swastika brings to mind images of the Nazi regime, Adolf Hitler, the World Wars, and concentration camps. However, to someone of the Hindu religion, the Swastika represents a sacred, lucky, and auspicious symbol. Ferraro (2004,

p. 25) suggests that "it is the shared meaning of our symbols that enables us to interact with one another with the least amount of ambiguity and misunderstanding".

All cultures are symbolic systems which confer meanings to things, experiences, and events. Language, as part of this symbolic system, is a set of symbols which people use to communicate and interact. Language is a powerful tool to share experience, knowledge, and beliefs (concepts that people accept as true) and as "people communicate about themselves and their environment, they build a consensus about the nature of humankind and the universe in which it exists" (Crapo, 1993, p. 26). Furthermore, in semiotics, people make meanings through the creation and interpretation of *signs*. Signs take the form of words (language), sounds, smells, images, objects and so on, but only become *signs* when people invest meaning in them. Saussure's (1959) theory of the sign asserts that a sign consists of a matched pair of 'signifier' and 'signified'. The signifier is the word, the sound, the image and so on, and the signified is the concept that the signifier represents - the meaning given to the signifier. Both the signifier and signified are needed to create meaning and thus create a *sign* but the relationship between the signifier and signified is arbitrary. For example, though the letters d-o-g spell 'dog', it does not in any way directly embody a real dog as it exists in the world.

However, this 'arbitrariness' in Saussure's theory (1959) can be accounted for if the concept of symbolic interactionism (Blumer, 1969) is taken into consideration. The basic principles of language, meaning, and thought in symbolic interactionism state that:

a) people act based on the meanings objects have for them;

b) interaction occurs within a particular social and cultural context in which physical and social objects (people), as well as situations, must be defined or categorised based on individual meanings;

c) meanings emerge from interactions with other people and with society; and

d) meanings are continually created and recreated through the process of interpretation during social interactions. (Blumer, 1969)

This notion is essential to understand how people co-create meaning and interpret signs. The signified is something which ultimately varies between individuals, contexts, and interactions – it is subjective and internal to the perceiver who is influenced by culture.

In semiotics, denotation and connotation are terms which are also used to describe the relationship between the signifier and the signified. Denotation refers to the 'literal', 'obvious', or common sense meaning of a sign, such as that which is provided by a dictionary. Connotation, however, refers to the socio-cultural and personal (emotional and imaginative) associations of the sign, which are more abstract, subjective, and variable. Barthes (1973) developed this notion further and applied the terms denotation and connotation to semiotic modes other than language.

In Barthes' view, images also have denotative and connotative meanings; connotations are references to abstract concepts which are not merely individual, subjective ideas, values, and associations, but abstract associations of culturally shared meanings (Barthes, 1977). These semiotic elements of denotation and connotation will be further discussed in Chapter 3, in relation to the construction of my methodology, and how semiotics can be used as an analytical tool enabling me to conceptualise the meanings of NHA representations.

According to Tüür and Tønnessen's (2014), 'representation' is presented as a semiotic term, i.e. a device for meaning construction. They further assert that the way in which we represent reality tends to influence our perception of reality. In a cultural context, the manner in which we represent animals says a lot about who we are, or who we strive to be, and what we are conflicted about. Whether the animal is constructed as the radical other or someone with whom we can relate and feel kinship, describing animals in popular culture is often – if not

always – a way to indirectly describe ourselves. Our identity as humans is intimately tied to that of the animals, whether these two are identified or defined in opposition. Whether 'man' (i.e. our subspecies Homo sapiens sapiens) represents itself as animal or non-animal, über-animal or "out of this world", an immanent creature which is part of nature or a transcendent being incomparable to the rest of the living, reflection on animal representations is, in the context of human understanding, ultimately self-reflection. (Tüür & Tønnessen's, 2014, p. 7)

This assertion draws similarities with ecocritics. Huggan and Tiffin (2010), who discuss fixed species boundaries as fictional, and that NHA representations are "more-or-less transparent allegories of ourselves" (Huggan & Tiffin, 2010, p. 173), which is a view shared by Burke and Copenhaver (2004). Based on these perspectives, the NHA can thus be viewed as a mute symbol, occupying a symbolic role for myriad differing literal, figural, metaphorical, allegorical, and other representations.

The notion of man as animal or non-animal is foregrounded, and ecocriticism begins to question this distinction between 'human' and 'animal'. Ecocriticism is both an interdisciplinary critical literary stance and a theoretical discourse that studies the relationships between humans and non-humans within the ecosphere and the ecological implications of language and literature in the physical environment. This ecocritical position of seeing humans and nature as interconnected and part of a whole ecosphere has also informed my decision to use the term 'non-human animal', thus drawing attention to the interconnection of 'human' and 'animal'.

So as to further articulate my choice of terminology, I will discuss some fundamental philosophical perspectives on human relationships with NHAs and use this as a springboard to demarcate my operational definition of NHAs in this study. I begin with these philosophical perspectives as they provide an interdisciplinary point of interconnection with science,

especially given that at one time in history, 'natural philosophy' was regarded as broadly equivalent to science, and provided blueprints for contemporary physics, chemistry, astronomy, and medicine (Massimi, 2015).

## 2.3 CARTESIAN DUALISM

Philosophy often begins with ontological questions about the nature of the human being and how the human being is part of and situated in nature. This is fundamental to this research in relation to representations of NHAs and the role of culture as a partially influencing factor. One of the ways in which humans have attempted to position themselves is by comparison and contrast with those things in nature that are most similar to themselves, i.e. NHAs. Within these ancient debates about the interconnectedness of human nature and human beings as part of nature, questions about animal consciousness have risen in the Western tradition through the philosophy of Descartes, who asserted that humans are qualitatively different from 'animals', in a binary and dichotomous relationship that has come to be commonly termed as Cartesian dualism.

Descartes' (1641/1994) mechanistic philosophy traditionally distinguished between two substances *res cogitans* (generally translated as 'thinking substance', all things purely mental, or the 'mind'), and *res extensa* ('extended substance', corporeal, or extended in space). In Descartes' Meditations (1641/1994), the 'mind' (mental) is contrasted with the 'body' (physical), and he establishes a dualistic theory for understanding man's thinking mind and man's body in relation to (and within) nature, namely, that the mental and physical are fundamentally distinct; thinking is given significance and the body is a non-thinking object that moves like a machine. This declaration of a mind-body dualism sharply separates the two, while also radically prioritising *res cogitans* and marginalising other modes of being such as perception, emotion, and imaginal experiences from the world of rational thinking.

Cartesian dualism is traditionally associated with the view that NHAs lack minds. Descartes' (1641/1994) argument for this view was based upon what he took to be the failure of animals to use language rationally or to reason generally. On this basis he claimed that nothing in NHA behaviour requires a non-mechanistic, mental explanation; hence he saw no reason to attribute a 'mind' to animals. He introduced the notion of a 'reflex' to explain the behaviour of NHAs, and he reduced them to reflex-driven machines, with no intellectual capacities. Therefore, all non-humans, by this definition, are not part of the thinking 'substance'; they are by default part of *res extensa*, and thus, the fundamental relationships between humans and all that is non-human is based on this dualistic perspective in general.

This type of binary perspective, then, has a consequential effect on the perceptions of NHAs by humans, positioning each within a vertical, hierarchical structure, which places humans as superior. Descartes (1641/1994) denied NHAs the ability to reason and to truly feel pain, and he denied them a soul, reducing them to complex automata at best. However, it can be argued, from the perspective of animism and earth-centred religions, that NHA bodies are no less suitable vehicles for embodying a soul, or any other of the reputed non-physical aspects of *res cogitans* posited by proponents of dualism than human bodies.

## 2.4   DUALISM VS. ANIMISM

The origins and significance of cultural differences among relationships and attitudes towards NHAs has been the debate of anthropologists for years. These attitudes often appear highly variable and arbitrary (Serpell, 1996). Daston and Mitman (2005, p. 12) use the phrase "thinking with animals" to refer simultaneously to the ways in which people "think they know how animals think" and also how they "use animals to help them do their own thinking about themselves" – which draws similarities with Tüür and Tønnessen (2014) and Huggan and Tiffin (2010) regarding the symbolic role of NHAs. Daston and Mitman (2005) contrast this

with thinking 'about' NHAs as object and human animals as subject. The evolution in this way of thinking, both with and about NHAs, is reflected in human representations of NHAs across multiple fields throughout history such as folklore, mythology, media, literature, and art, among others.

Within the field of theology, 'animism' is a representation of NHAs prevalent in cultures across the world. The term 'animism' is derived from the Latin word *anima*, which means 'soul' or 'breath' and is the belief that either all natural things and phenomena are alive, or that they possess an innate soul or spirit (Krech et al., 2004). According to Nelson (1925, as cited by Krech et al., 2004, p. 55) it is occasionally referred to as vitalism, organicism, or paganism, and "has repeatedly woven its way into the fabric of the Western worldview".

Harvey (2005) explains that contemporary perspectives on animism have moved away from Edward B. Tylor's (1871/1920) demeaning theory, and instead now functions as a name for a particular type of religion. Harvey's explanations have a clear link with the philosophy of holism that is central to holistic education, and he states that animism

> *[is] typically applied to religions that engage with a wide community of living beings with whom humans share this world or particular locations within it. It might be summed up by the phrase "all that exists lives" and, sometimes, the additional understanding that "all that lives is holy." […] It has been found helpful in drawing attention to ontologies and epistemologies in which life is encountered in a wide community of persons only some of whom are human.*
> (Harvey, 2005, as cited in Taylor, 2005, p. 81)

These statements are particularly interesting in the context of my doctoral research as they underline the importance of recognizing the place of NHAs within the biosphere, and, by extension, the noosphere. The attribution of particular traits to NHAs within the noospheric

conception is a means to give NHAs salience, acknowledge their ecological role, and raise awareness that they are constitutive of the environment. From a broader stance, Harvey's (2005) statements also link to a holistic worldview which paves the way towards a holistic conception of NHAs within education, which is further discussed in the third part of this Literature Review.

### 2.4.1   The non-human animal

The previous sections of this Literature Review on philosophy, religion, and language, formed the key focus for the first part of this chapter on culture and representations of NHAs. These discussions have been instrumental in highlighting the ways in which the categories of 'human' and 'animal' are culturally (co)constructed, and have also attempted to show why the term 'non-human animal' has been adopted in this present research. Human beings are part of the animal kingdom and the premise according to which man and nature are dichotomous is inaccurate. As Rutherdord (2018, p. 2) states, "Humans are animals. Our DNA is no different from anything that has lived in the last 4,000 million years".

The reason for using the term 'non-human animal' (NHA) is most clearly articulated by the reasoning of Gross and Vallely (2012) in which they state:

> *Highlighting the "co-construction" of the categories of human and animal is an attempt to question the dominant Western articulation of the human/animal binary that overwhelmingly view this division of the world into human and animal as a fact. Far from being a datum given in the natural order, the human/animal binary has always been and remains unstable, disputed, and negotiated…. many cultures do not even conceive of this bifurcation of the animate world into human persons and animal organisms.* (p. 2)

Taking into consideration Gross's arguments and reasoning, I do not use the term NHA to directly, or connotatively, demote or elevate either category, nor do I use the term to simply do my "duty to disenthrone an outdated human exceptionalism that evolutionary theory and the like have rendered implausible" (Gross & Vallely, 2012, p. 2). Instead, this term has been adopted to call attention to both categories and how they are both deeply enmeshed, while also represented as binary.

Though the term may remain insufficient for any kind of rethinking of the human/animal categorisation, it is not the aim of this current research to either surrender reliance upon them in rethinking our identity (Calarco, 2008), or to "upset the human/animal border" (Gross & Vallely, 2012, p. 3) by seeking to understand representations of NHAs in Mauritius. The following section elucidates why, due to weak default anthropocentrism, it may not even be possible to conceive of, and experience, our humanity outside of these categories.

## 2.5   ANTHROPOCENTRISM AND SPECIESISM

In section 2.3, Cartesian dualism was discussed, and this is a prime example of the anthropocentric perspective on understanding and representing the world, which is an important perspective to bear in mind when considering participants' representations in relation to the research aims and questions. A clear definition of anthropocentrism is that it is a

> *philosophical viewpoint arguing that human beings are the central or most significant entities in the world. This is a basic belief embedded in many Western religions and philosophies. Anthropocentrism regards humans as separate from and superior to nature and holds that human life has intrinsic value while other entities (including animals, plants, mineral resources, and so on) are resources that may justifiably be exploited for the benefit of humankind.* (Boslaugh, 2016, para. 1)

By our very nature, human beings, with human psychological perspectives, are thus naturally predisposed to "default anthropocentrism". The reason for this being that whatever we understand about an NHA is what we are *able* to understand about it "given the means that allow us to do so" (Martinelli, 2010, p. 303), which is, by default, human frames of reference that cannot provide wholly impartial interpretations of NHA behaviour. The common definitions of anthropocentrism point to the following elements:

a) Nature is an entity existing apart from and for the benefit of humans.

b) Nothing in nature can be considered autonomously from humans.

c) It is ethically acceptable for humans and non-humans to be treated in different ways.

Nature is, therefore, not of interest because of its hypothetically intrinsic value, but only because it has an instrumental value for and to humans (Martinelli, 2010). Thus, foregrounding a human-centred understanding of the world is not necessarily an anthropocentric view of the world, unless specifically referring to the weak default anthropocentric definition. This is a significant concept for this thesis, in relation to the discussions of culture and representations of NHAs. It was a major ideology that was noted in the findings of the earlier research project exploring representations in the pre education-reform textbooks (Oozeerally & Hookoomsing, 2017). In the default anthropocentric form, human representations are articulated from an anthropocentric worldview, which can be culturally (co)constructed, and impact on language and discourse about the biosphere, nature, and thus, NHAs.

## 2.6    REPRESENTATIONS OF NON-HUMAN ANIMALS

Broadly speaking, it is understood that anthropocentrism and speciesism are the direct products of representations, and representations are a recursive product of those former ideological perspectives. While discussing representational systems, Bickerton (1990, p. 75) compares the 'narrow' definition to what he qualifies as a neural definition which operates at "the highest

level of abstraction". For Bickerton (1990), psychology equates the concept of representation to innately or experientially derived fixed knowledge systems. The construction of representations towards objects, events or concepts is intrinsically linked to experiences individuals go through. Jung (2001) and Stibbe (2015), for example, explain how representations of NHAs and the ecosystem, in general, are embedded into individuals' experience.

Bang and Døør (2007) draw upon the writings of Epstein (1995) in order to explain the term 'ideologeme', as a basic unit of ideology manifested in terms of language units. Anthropocentrism fits the psychological definition of representation as it is a set of ideologemes (Epstein, 1995, as cited by Bang & Døør, 2007) analogous to an experientially derived 'fixed' form of knowledge system mediated by language. For example, in Mauritius, the tenrec is often associated to the Creole community (see section 1.4.1 in Chapter 1) because its consumption is often attributed to people of that group. This represents a fixed knowledge, derived from experiential observations, and culturally replicated and transmitted as information. However, such kinds of representations are also deeply rooted within the Mauritian collective cognition to represent a strong ideologeme. One of the consequences of this ideologeme normalisation is that the tenrec has been the object of ideological debates in textbook writing. This thesis explores such ideologies and ideologemes, which could potentially contribute towards addressing culturally constructed ideological associations of NHA representations in Mauritius, so as to provide primary school children with ecologically responsible discourse in their curriculum materials.

### 2.6.1 Calvet's Metaphor

While developing the concepts of practice and representations with respect to language use, Calvet (1999) uses a metaphor which is useful for the circumscription of the term 'representations'. He uses an example derived from consumerist reasoning whereby potential

buyers must operate a choice as far as buying a car is concerned. There are three mechanisms involved: 1) the analysis of their real or imaginary needs with respect to specifications, 2) their tastes, determined by trends, advertising, advice from friends and so forth and, 3) ideology which can cause them to either support or boycott certain makes. The buyers' choices therefore have an influence on the statistics pertaining to the sale of cars. Likewise, representations determine practice and have an influence on realities. Calvet's (1999) metaphorical reasoning is at least partially transposable to ideological issues around the relationships between human and non-humans.

I propose to reflect on the transposition of Calvet's metaphor (1999) to ideological issues around relationships with NHAs through the identification of three non-exclusive vertices of a triangle (see Figure 2 below). The first vertex implies a form of egocentric/anthropocentric set of evaluations with respect to the "area of life" (Stibbe, 2015, p. 17); I am borrowing this formulation to avoid reification of NHAs into simple 'objects' devoid of individuality. In ecological discourse, this can refer to evaluations and appraisal patterns interiorised by humans, with respect to non-humans, in terms of their potential usefulness such as food, 'material', or objects of cultural significance, for example. It can also point to what Stibbe (2015, p. 17) calls "salience"; I, therefore, propose to combine Calvet's (1999) viewpoint and Stibbe's (2015) definition of salience in order to propose what I call the 'anthropocentric salience' vertex.

The second vertex is centred on the emergence of tastes and personal/collective predispositions towards the area of life, with respect to opinions and opinion-carrying media and material, including texts. Stibbe (2015, p. 17) uses the concept of "evaluation"; opinions can lead to evaluation, and the spread of evaluative patterns feeds back to opinions, which can be good or bad. These types of structures for behaviour link to Calvet's (1999) work in the sense that different mediums for expressing opinions contribute to the development of personal

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knowledge, and the attitudes that subsequently develop from them. Individuals, as members of the collective consciousness forming the cultural cognitive machine (Morin, 2008), and different types of media and texts, all contribute to the emergence of evaluations and variable strong opinions with respect to NHAs.

The third vertex deals with ideology, which I consider as an extension of opinions. The formation of ideological standpoints at least partially stems from the condensation and sustained spread of opinions and evaluation patterns. This corroborates with what Stibbe (2015) calls 'ideology', and ideological discourses follow the same expansion mechanisms as opinions. I, therefore, propose a diagram (see Figure 2 below), as a representation, to condense my conception of 'representations' for this thesis; this conception is drawn from the metaphor of Calvet (1999) and Stibbe's (2015) notion of stories.

**Figure 2**

*Diagrammatic representation of the concept of representation*

Anthropocentric/salience

Language

manifestations

Opinions                                                                Ideology
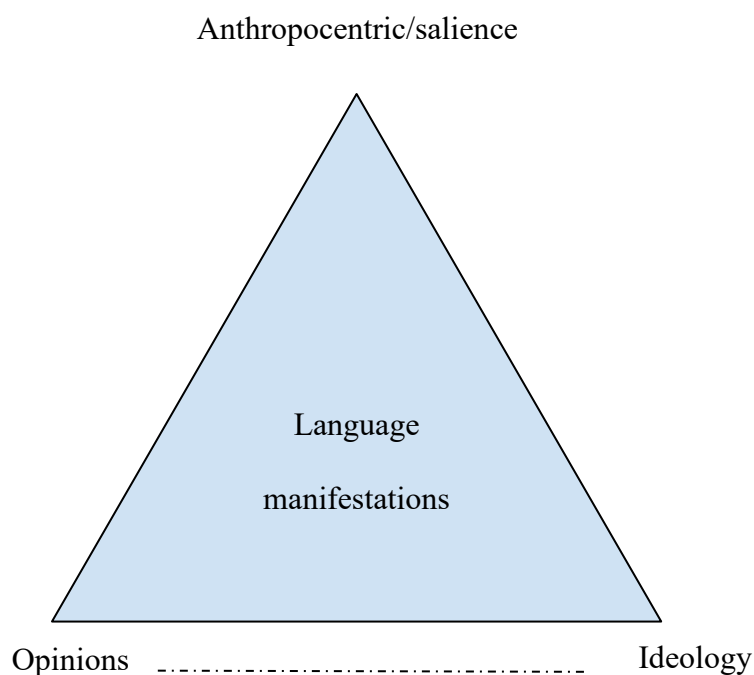
### 2.6.2 *Anthropomorphic representations of non-human animals*

Since the existence of the human species, NHA symbols have been reflected in a myriad of representations, such as in cave paintings, totems, legends and myths. This phenomenon is highlighted by Kellert (2002) and reveals that NHAs have been part of the noosphere since humans started to use symbols as a means of representation. This prolific presence of NHA representations, whether real or imagined, in the arts, oral traditions, religious symbolism, mythologies, and literatures of cultures across various geographical locations reveals a consistency with the biophilia hypothesis. This is a theory proposed by Wilson (1984) which suggests that human beings possess an inherent tendency to search for connections with nature and other forms of life.

Not only is there a tendency to seek such connections, but talking animals in stories, and oral folktales appear "so universal a convention, that we hardly notice it" (Le Guin, 2004, p. 22). Though it may be such a common convention that it passes unnoticed, this doctoral research draws attention to the need to better understand varieties of representations in diverse cultural contexts and the impact on constructions of knowledge about NHAs, ecological issues, and the biosphere.

In modern times, "talking animals have become commonplace in the realm of children's literature, and are, perhaps, even expected. Animals of every variety populate picture books, and even chapter books, and display varying degrees of human-like characteristics" (Dunn, 2011, p. 3). Although anthropomorphism originally referred to ascribing human forms to the description of gods (Horowitz & Bekoff, 2007) in the theological context, the meaning has changed over time, and is more commonly associated with the predisposition to imbue human characteristics to objects, events, and NHAs. For Horowitz and Bekoff (2007), anthropomorphism is a form of induction whereby human beings attempt to understand the

unknown by making use of known representations that are based on stimuli they regard as being related.

This is an argument which is reinforced by Epley and Waytz (2008) who suggest that people engage in anthropomorphism as a result of the need to experience control and understanding of the environment, and an overwhelming need for other human beings in their daily lives to satisfy basic requirements of social connection when human connections are lacking. The way in which the character of Chuck Noland (played by Tom Hanks in the film *Cast Away)* anthropomorphises the football, is an example of this; the anthropomorphic NHAs in Winnie-the-Pooh (Milne, 1926) are an example in the context of children's literature.

In relation to the concept of representation, this is significant, since anthropomorphism and the biophilia hypothesis suggest that, through the course of human evolution, we are innately predisposed to be more attuned to other life forms. Anthropomorphism is considered a natural human tendency, hence the reason that it is so widespread across cultures, and throughout history. The phenomenon can be thought of as a form of induction, or a process of inductive reference about NHAs, and as a strategy to satisfy the basic human needs of social connection and affiliation, as well as to acquire understanding of the natural world through human psychological perspectives. Considering the significance of the relationship between culture and representations, as discussed so far in this chapter, I propose a diagram (see Figure 3) in the following section as a condensation of the key elements that have been reflected on in this first part of the literature review.

## 2.7 CULTURE WITHIN THE NOOSPHERE

**Figure 3**

*Model of culture within the noosphere*
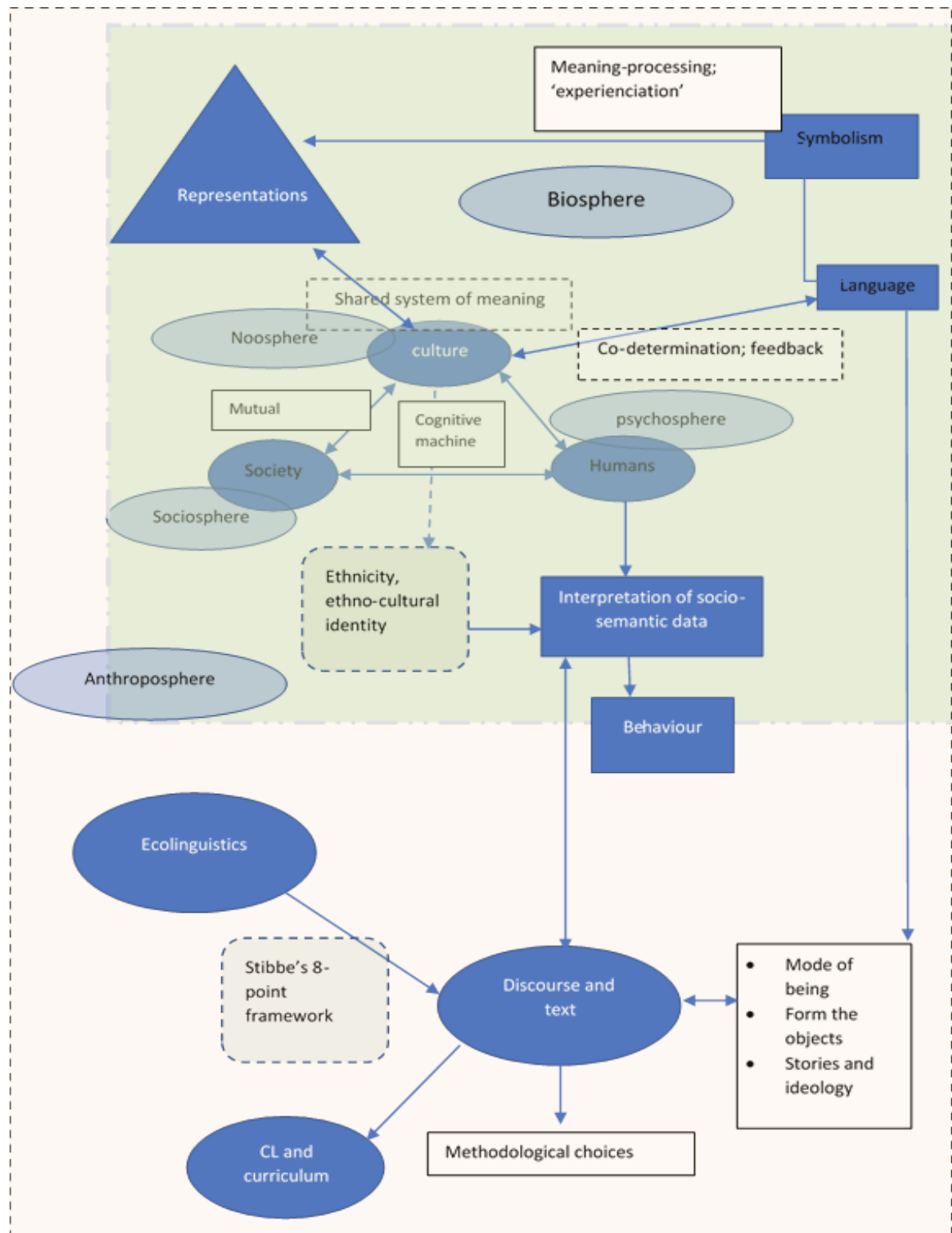
The diagram above (Figure 3) represents a summation of the main elements discussed so far in the first part of this chapter, which has focused on conceptualising culture and representation in relation to the research aims and questions of this doctoral thesis.

The anthroposphere includes the **psychosphere**, the **sociosphere** and the **noosphere** (Morin, 2008).

> **Psychosphere** can be defined as the minds and mental life in the brains of people.
>
> **Sociosphere** can be defined as the realm of group dynamics, group identity, social structures and systems.
>
> **Noosphere** can be defined as the sphere of human consciousness, ideas and mental activity, particularly in regard to its influence on the biosphere. (Morin, 2008)

Morin (2008) argues that the noosphere cannot exist without the psychosphere; the brain is the support system of the mind, which in turn, is the support of ideas, thoughts and representations among others. For ideas to flourish and be transmitted, peoples' minds need to co-exist in a social tapestry, where group dynamics allow the flow of these ideas. The social setting is the sociosphere, and it is through interactions between the sociosphere and the psychosphere that the noosphere emerges. It is important to note that the anthroposphere is within the biosphere, and not separated from it. This follows my anti-dualist, integrated posture where everything is interrelated, like Morin's (2008) hologram.

The 'hologramic' principle is particularly useful as it reinforces the notion of interrelatedness: culture is in society which is in culture; humans are within culture and form culture; language is within culture, which is within language. As demonstrated in the diagram above (see Figure 3), language, as a symbolic system itself, is closely linked to representations

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and much of meaning-making and processing occurs via language. Language is also a mode of being, and as pointed out by Foucault (2013, as cited in Stibbe, 2015), language and discourse form the objects of which they speak; this is particularly visible through ideology and stories (Stibbe, 2015). Behaviour overlaps the anthroposphere and the biosphere, because I argue that socio-cognitive constructs within the anthroposphere, including representations and ideology, have an influence on general behaviour towards other members of the biosphere (plants and animals). This behaviour can be positive, for example, awareness and positive attitudes, or negative, such as degradation or negative representations.

This overall epistemological conception of language, representations, and culture combined with knowledge pertaining to the biosphere, noosphere, and anthroposphere, is compatible with the ecolinguistic perspective, which is discussed in detail in the following chapter. Knowledge gained and reflections from this first part of the literature review have directly impacted upon my methodological choices for this research (see Chapter 3) in terms of circumscription of the field, as well as sample of children's literature and language subject area textbooks. Having discussed language, discourse, ethnicity, representations, and ideology in relation to culture, and socio-cultural constructions of knowledge about NHAs, and the biosphere in the broader sense, I now move to part two of this literature review, which orients the discussion around NHA representations and didacticism in children's literature.

## 2.8   THE CHILD AND CHILDREN'S LITERATURE

The previous part of this chapter focused on discussing representations in culture, and the interconnected and inherent links to language, ethnicity, and ideology. This section of the literature review builds upon these discussions in relation to children's literature, and subsequently curriculum and education, in the third part. Children's Literature (CL) is a fundamental part of this present research as it is considered as one of the main textual media

through which children are introduced and exposed to NHA representations, especially within education and curriculum. CL therefore contributes to the construction of children's representations around NHAs. Definitions of CL, however, are unstable and contested; scholars have differing perspectives on what children's literature is. Definitions can be both pragmatic and organisational, or based on features attributed to texts or to readers. Distinctions can be based on form, content, or quality, as well as based on analyses of language which looks to the reader and the mode of address.

In this section, I will attempt to discuss and operationalise the term 'children's literature' so that it can be integrated into my theoretical and conceptual framework, subsequently serving as a basis for my discussion around education and curriculum issues. The two words in the key term, namely 'children' and 'literature' are not without their own difficulties of definition; however, a definition of children's literature is required as it is a key term in this thesis. Several key ideas and arguments will be discussed building towards a proposition for defining the term in this research and for the purpose of exploring representations of NHAs.

### 2.8.1   Opening remarks on children's literature

While 1744 is often cited as the year children's literature was born, with Newbury's publication of *A Little Pretty Pocket-Book*, aimed, advertised, and designed for children as a consumer group, it was in the 19th Century that children's literature began to really prosper (Hintz & Tribunella, 2013). This growth was linked to social, educational, and especially economic factors, i.e. as the population increased there were increases in educational opportunities along with advances in technology which allowed printed material to be more readily available and accessible to a slowly growing audience. This growing audience of readers was, in part, due to the increased size of the middle class populace, which led to a wider reading public, making children's books a more viable market, with literary magazines providing an effective and

affordable way of marketing reading material to children. As the 19th Century was drawing to an end, full colour picture books were increasingly available, and by the 20th Century, in Britain, children's literature was flourishing (Hintz & Tribunella, 2013). The rise of children's literature in the 20th Century "owes a great debt to postmodernism and its tendency to eliminate barriers, level hierarchies, and give equal voice to all." (Beckett, 1997, p. 9).

The market for children's literature has been growing steadily since then, and has become a significant field of literary study and scholarship, with the first British children's literature research conference held in 1979 (Hunt, 2004). However, definitions of what exactly constitutes children's literature are as broad and varied as the topics covered in children's books themselves; there is little consensus about what constitutes a text for children. Definitions of what is actually meant by 'children's literature' is perpetually shifting and there is no single fixed definition, which is perhaps elusive for a reason, and as Fisher (1964, as cited by Hunt, 2004, p. 9) noted, that "we need to constantly revise and re-state the standards of this supremely important branch of literature." Starting with an initial reflection on the concept of the 'child', a variety of key definitions are reflected upon in the sections below. These definitions and debates provide the pathway for operationalising the term in this doctoral research (see section 2.10).

### 2.8.2   *Conceptualising the child*

Hintz and Tribunella (2013) go through some key models of childhood, which reflect conceptualisations of children and childhood, how the 'child' is perceived, how their lives are perceived, and how they are treated. Fundamentally, their historical account of childhood and children suggest that no assumption of the 'child' can be taken for granted. It also allows for more reflection to be given to the imagined child reader of children's literature. One of the key models which provides a useful perspective for this thesis is the model of the developing child. This conception of the child suggests a continuum with people of different ages slowly moving

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towards adulthood and childhood as a state of transition, with the work of Piaget (1977) and other developmental psychologists being significant in this model. In the context of this doctoral research, the conception of the 'developing child' in a state of slow transition into adulthood is a useful model, especially in relation to how children construct meaning and knowledge about the world as they grow. This conception of the child and childhood also includes the UNESCO definition of early childhood as the developmental period from birth to 8 years of age; which is reiterated in the Mauritian National Curriculum Framework Pre-Primary (MoE, 2010).

The conception of the child from the UNESCO perspective draws from the developmental model, which marks a fundamental difference between childhood and adulthood (Hintz & Tribunella, 2013). It encompasses the themes put forward by Woodhead (2006) which include the child as distinctively different from older children (above the age of 8 years), adolescents, and adults, in physical, mental, social, and emotional functioning. That is, childhood is considered as involving distinctive phases and stages of development, inclusive of progressive transformations in the child's physical, mental, cognitive, and social-emotional competencies. There is also variability in the stages of development as the child is conceptualised as having unique individual capacities and special needs, including ethnicity and cultural circumstances within specific contexts.

### 2.8.3   Defining children's literature

Current definitions of CL no longer reduce it to literature written specifically for a child audience, and instead take more cognisance of the intellectual and creative complexities involved. Scholarship and literary criticism of children's literature should be given the same level of appreciation as of any 'literature', but as Lukens (1986) notes, it is important to recognise how the child's experience forms part of conceptualising the child, and, in turn, how to approach children's literature and criticism.

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While Short (2011) reminds us of the contribution of adults in the conception of children's literature, she also underlines the capacity of children to use strategies to understand and subvert adult control, as well as the intention of the author(s) to invite children into the conception of literature. From this perspective, the ontological conception of the child is important. Literature is perceived as being fundamental in encouraging alterity, hermeneutics, construction of meaning via experiential investment, and a form of transduction where the child-reader participates in a transformative process of learning and of transforming the text itself. A broad approach to alterity does not only involve being able to consider the other, but also involves trying and apprehending, and understanding the word through the (projected) cognitive apparatus of the other(s) (Robillard, 2008). Literature should therefore be experienced first, before being used to delve into more specific orientations for other areas of learning (Rosenblatt, 1938).

Drawing from these statements, CL should be read against experiential information, in the sense that the child can be given the freedom to be critical based on what s/he lives within her/his environment. Besides this, as Short (2011, p. 50) points out, "[…] children's literature, as a field of study, can be opened up through a focus on literature as inquiry into life, and that critical inquiry is central to dialogue and literary understanding". For instance, in the case of depictions of NHAs, children can interpret textual information with respect to what they experience in their home environment. This is discussed later in Chapter 6, for data set 3, where it was found that children construct their own representations of NHAs from interactions in their home environment.

The post-structuralist perspective provides a view in relation to the linguistic turn, discourse, and semiotics in children's literature scholarship, which is of particular significance to this thesis, and which synthesises several of the key perspectives that have been discussed above. Rudd (2004) offers a definition of the term which is useful for this present research,

especially in relation to representations of NHAs such as anthropomorphic characters. According to Rudd (2004), children's literature consists

of texts that consciously or unconsciously address particular constructions of the child, or metaphorical equivalents in terms of character or situation (for example, animals, puppets, undersized or underprivileged grown-ups), the commonality being that such texts display an awareness of children's disempowered status (whether containing or controlling it, questioning or overturning it). Adults are as caught up in this discourse as children, engaging dialogically with it (writing/reading it), just as children themselves engage with many 'adult' discourses. (Rudd, 2004, as cited in Hunt, 2004, p. 39)

This suggests that there is both an adult and child engagement with the discourse of children's literature, potentially influencing representations of the reader, and there is a commonality of representations in children's literature, especially in relation to characters or situations. I explore these symbolic, metaphorical, and ideological representations of NHA characters in the samples of children's literature and language textbooks in Mauritius, in Chapters 4 and 5 respectively.

## 2.9   CHILDREN'S LITERATURE WITHIN THE CLASSROOM

Children's literature, in the Mauritian curriculum, is often included as a means to support language learning. In the National Curriculum Framework Primary (MoE, 2015), Grades 1-6, the term 'literature' is evoked only in the case of the optional languages (Hindi, Urdu, Marathi, Modern Chinese, Bhojpuri and Kreol Morisien). Appreciation of literary productions is also mentioned in the case of French, as a learning objective of French, and also in written comprehension. Again, however, it is mentioned in terms of textual support for reading. Among the directly related constraints are syllabi and curricula, which are often built around the dominant social praxis (global capitalism), which is reductive in nature and tends to reduce the

human as a subject working towards productivity. The National Curriculum Framework of Mauritius, despite having certain grounding in holistic development, is firmly rooted into this reality. Short (2011, p. 48) carries out a reflexive analysis of literature and its role in education at elementary level, stating that:

> *Literature in elementary classrooms can be viewed as no more than a filler that buys some free time or as a tool that sits alongside a skills worksheet [...] If literature opens an inquiry into life, then teaching must follow the curiosity and compassion that students are capable of bringing to reading.*

These statements appear to have a high degree of inter-contextual penetration and indicate that representations of literature, within the education system itself, have an impact on the relationship children have with books, especially when books become 'schoolwork' instead of 'life work'.

Short (2011) tries to situate literature at the nexus of experience, dialogue and critical inquiry, which is presented as a stance between two conceptions of literature: as an artistic humanising force, and as an instrumental tool for learning to read. In the first place, literature is a means to re-humanise knowledge and its construction thereof. This is particularly significant for my work, as the issues of holistic and 'humane' education are pertinent. The observations formulated by Short (2011), whereby literature is often conceived as an instrument for the acquisition of literacy skills akin to the top-down process of reading acquisition, are applicable in the Mauritian context as well. In the primary school sector, literature in the first three years of primary, approximately, is mainly used as a form of textual support to attain objectives pertaining to general literacy skills.

Short (2011) stresses the importance of experience, notably on how it can help construct meaning. She notes that it is fundamental for children to have a firm grounding in their own

life experiences so that they can generatively move beyond their selves and create a productive tension between their current understandings of the world and their new experiences. This can be considered as analogous to Vygotsky's (1978) Zone of Proximal development, where, in this case, the tensions will act as a catalyst in the establishment of connections between the known (current understandings), and unknown (new experiences, often in the presence of the more capable/experienced other). Literature, thus, provides and enables a space where children will be able to experience and create knowledge and understanding in general.

Short (2011, p. 50) also evokes the "imaginative shaping of experience and thought into the forms and structures of language […] children are the readers who reshape experience and use literary language to name and transform life". The child is therefore not only an active meaning maker where s/he constructs and integrates knowledge to his/her cognitive structures but is also able to be an agent in transforming life. This aspect is of particular significance to my work as literature, in this sense, can be viewed as a form of discourse which "is a practice not just of representing the world but of signifying the world, constituting and constructing the world in meaning" (Fairclough, 1992, as cited in Stibbe, 2001, p. 147). The capacity of transforming life via literature also links back to Foucault's (2013, as cited in Stibbe, 2015) analysis about discourses systematically forming the objects of which they speak. In relation to the current doctoral thesis, discourse on and around NHAs in children's literature, textbooks, and verbal discourse of children and textbook writers thus yields the potential to form the representations (positively or negatively) of NHAs in the Mauritian context.

Upon navigating the various epistemic and theoretical postures around CL, Hintz and Tribunella (2013) underline one important aspect: teleology. Teleology, in its simplest sense, means purpose; and indeed, the intention of the reader, writer or researcher is fundamental in how the CL can be conceptualised in general, and experienced within the classroom. As Hintz and Tribunella (2013, p. 52) point out, "ultimately, the definition one chooses at a given

moment – and we must allow the possibility of making different choices at different moments – will be determined largely by one's purpose". Thus, for this research, the importance of the teleological dimension provides the opportunity to focus on the relationship between children's literature, education (i.e. curriculum materials), and learning. General discourse about education tends to typically involve elements of didacticism and pedagogy within and outside the classroom context and, as discussed in section 2.9.1, there is often a didactic element to children's literature.

### 2.9.1   Children's literature and didacticism

In Mauritius (as in many contexts), children's literature is used in the didactic sense, be it either in textbooks, or as media to develop literacy, or to support materials in the class, or even to be used more generally outside of the school environment. This is relevant to Short's (2011) statements regarding the impact on the relationship children have with books, which are often associated with 'schoolwork', and how they construct meaning in relation to the representations they are exposed to in CL. According to Hintz and Tribunella, (2013, p. 8) "even texts that are not intentionally didactic can teach, influence or shape readers". There appears to be, in terms of didacticism, an 'active' and a 'passive' form. Certain books in CL are explicitly didactic, which can fall into the 'active' form, while the rest exhibit a 'passive' form, in the sense that they indirectly influence and shape readers. One example of the active form of didacticism was found in *Zistwar Mustik* (Mosquito Story) and the passive form in *Greedy Zebra*, which are discussed in Chapter 4.

The child is seen as an active meaning maker (Jewitt et al., 2001), and this also raises the question about how the child is conceived within and beyond CL, and this didactic dimension is particularly relevant to my work for two main reasons. In the first place, from a teleological point of view, I am exploring a sample of CL in this doctoral research with the finality of producing a reflection in education. I am, thus, positioning myself in relation to the

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investment of CL in language teaching, notably through its presence and use in language textbooks. Moreover, as discussed above, there is often a didactic element in CL, whether 'active' or 'passive'. Correlatively, as from preschool, children's books are heavily used as support material, as these play a particularly significant role in how children learn and construct knowledge and their representations through the information (be it factual or ideological) transmitted through the books. For the purpose of this research, I orient myself towards children's books which are didactic in nature, in the sense that they can be used at school level, either directly as material or as support in language teaching.

The link between CL and didacticism is also highlighted by Kline (2003) who states that instructional texts should be included in the conception of CL, which is an argument worth reflecting upon in relation to the orientation of the conception of textbooks. While I do not necessarily agree that textbooks 'are' CL, I do argue that the use of CL in education falls into the more explicit, 'active' form of didacticism through its use as literacy or support materials. Hintz and Tribunella (2013) state that CL is often crafted to teach a lesson, irrespective of the form which it may take (textbooks, novels etc); the didactic dimension appears to be transversal and didactic works form an integral part of CL. This helps me to orient my own choices in terms of methodological considerations as I will be exploring only the CL texts, such as short stories, rhymes, and poems in the curriculum textbooks for English, French, and Kreol Morisien. This is useful for clearly delineating the boundaries of the text analysis for this sample data set.

Children's literature represents a fundamental space for the transmission of values and for educating children. This is directly linked to socialisation and the construction of society, which helps in gaining understanding of the broader culture in which humans evolve. This is significant for this research as one of the aims is to explore the relationship between representations of NHAs and culture in the Mauritian context. According to Ruwe and Myers

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(2005), children's tales have a wide variety of cultural functions, and are, therefore, full of clues to changes in attitudes, value and behaviour. This is linked to the ideological dimension, and points to the fact that no material in CL is neutral; ideological messages are always transmitted whether overtly or more subtly. CL is therefore a vector for the transmission of ideas and ideology, which is discussed in detail in Chapter 3 in relation to Stibbe's (2015, p. 3) framework for "stories we live by".

The axiological (the valuation) dimension is also important as CL is a 'repository' of values which are transmitted to children, which has implications on social cognition, and the cultural cognitive machine discussed above in section 2.2. CL is therefore an important contributor in how children construct their social and cultural knowledge as individual members and part of the collective cognitive capital. This didactic aspect also extends to cultural functions in what might be called 'cultural didacticism'. Through its cultural functions, CL contributes to the formation of attitudes, values, and behaviour, which are all linked to ideology. In this sense, relationships with NHAs are at least partially constructed and reinforced through CL, thus making CL a valuable data set to explore in relation to representations of NHAs in the cultural context of Mauritius.

### 2.9.2   Children's literature and ideology

Ideology is an integral part of children's literature. Irrespective of its intention, whether it aims to normalise belief systems pertaining to a culture or challenge them, a text necessarily places an ideological imposition on the readers, as ideology is present in the very language and images constituting the book. This is applicable to ideologies directly corresponding to NHAs, such as anthropocentrism and speciesism discussed in section 2.5. Ideology holds such an importance in CL that there is an inextricable link between it and narratives as "ideology is formulated in and by language, meanings within language are socially determined, and narratives are constructed out of language" (Stephens, 1992, p. 8).

Luke and Freebody (1997) argue that all texts represent cultural ideologies and discourses, and that all readers construct readings from their own epistemological and ontological perspectives. Critical reading therefore implies that literature should be defined broadly in order to include oral and written forms. However, for the purpose of this work, I am limiting myself to written forms due to the methodological choice of using text analysis as the overarching method in combination with eco-critical discourse analysis. Poveda et al. (2009) point out that storytelling is polymorphous in nature and can fulfil cultural, entertainment and professional purposes. I situate oral storytelling in the cultural knowledge-transmission space as a form of meaningful multimodal performance. As per my observations at classroom level, storytelling is subsumed in text reading, for the purposes of bringing learners to build competencies in reading as well as oral comprehension.

The visibility of ideology in children's books is variable. Ideology is rarely reproduced as a thematised component in CL. However, certain aspects of ideology are reflected in texts, notably the social function and the cognitive function. The social function consists of "defining and sustaining group values… [while] the cognitive function [consists] of supplying meaningful organization of the social attitudes and relationships which constitute narrative plots" (McCallum & Stephens, 2011, p. 360). It is important for a child to learn and achieve some form of personal agency within the structures of society in order to be an active participant within the social matrix. The child will most probably learn to understand and negotiate the various codes used in society, with the main code being language, which is used in imagining and writing of stories.

### 2.9.3   Children's literature and the reinforcement of cultural identities

In the previous sections of this chapter I have presented the significance of the relationship between culture and representations in how NHAs are viewed, conceptualised, and given meaning. Children evolve as cultural beings, in complex cultural settings where realities are

presented from the lenses of those specific cultures. Short (2011) underlines the importance of democratic dialogue and alterity in the connection with our cultural identities and multiple ways of thinking. For example, when reading a children's book, irrespective of its form, children are always in dialogue with the text and with the cultural knowledge they have as part of their social development. The representations of children are therefore important as a data set (see Chapter 6) for this doctoral research work as these provide an opportunity to gain insight into the relationship between Grade 1 pupils' cultural knowledge and their representations of NHAs, through lived experiences, exposure to CL, and learning from curriculum materials.

According to the perspective of cultural studies, every product of a culture is not only significant for study but is also worthy of being studied. Understanding human identity is at least partially achievable through culture, and children's books can be considered as part of cultural products. "Children's books, even books for very young children, signify in complex ways, and we learn things about books, children, adult, economics, politics — in short, culture in a broad sense — when we study these books" (McGillis, 2011, p. 347). Children's books are therefore valuable artefacts in building understanding of the sociocultural dimension. This value is also applicable to how NHAs are represented within this sociocultural matrix, especially in terms of how they are perceived and treated, with the former being reinforced by the idea that reading, as an activity, also implies a mutual relationship with the environment. A reader entertains rapport with reading as an individual and as a part of the community; reading is not limited to the book. Instead, "we read our environment and our environment reads us" (McGillis, 2011, p. 347). An understanding of such representations in CL contributes directly towards the aims of this research to propose a model of ecologically responsible discourse and education in relation to representations of NHAs in Mauritius.

The power of children's literature to shape and reinforce cultural identities becomes increasingly evident. Short (2011) argues for the widening of modes of representation, and the concept of 'transmediation' (Siegel, 2006, as cited by Short, 2011, p.55), which is a way to "recast understanding about literature and its meaning for one's life". The concept has been used by Peirce (1966) who explains that moving an idea across symbolic systems, such as moving it from a written text to visual arts, invariably leads to the discovery of new meanings and relationships between ideas. In this sense, the process of transmediation allows the reader to go beyond the text and discover new meanings and dimensions such as alterity (Robillard, 2008), empathy, and reflexivity.

### 2.9.4   *Picture books*

For this present doctoral study, picture books represent an interesting pathway with respect to my theoretical and conceptual framework, and research aims. As a form of CL, picture books are heavily used in the school context, as direct didactic material or as support material for language teaching. As with other forms of CL, "picture books often engage in overt attitude formation through their presuppositions" (McCallum & Stephens, 2011, p. 360) such as depictions of a witch's black cat, the 'big bad wolf', or the loyal and playful dog. The idea of sequential art (Eisner, 1985), where successive images depict a narrative, is present in picture books as well, with the addition of corresponding words, where the words and pictures stand in a complex relationship (Sipe, 2011).

As a defining characteristic the 'picture book' can be considered in terms of a unified form. Picture books are traditionally opposed to illustrated books; in the picture books, text and pictures are interdependent and, in illustrated books, the text can stand alone. Another characteristic of picture books is their heavy reliance on design and production, such as paper, typography, and binding. For example, *The Cat in the Hat* (Seuss, 1957) is an iconic picture book, based heavily on NHA representations, where setting and costuming play an important

part in the identity of the book. These interactions between words and pictures in a picture book can be significant and formed part of the overarching text analysis that I carried out.

Word and picture interactions are useful in my conception of visual analysis with respect to salience, as they represent criteria pointing to how NHAs are represented in CL. Matulka (2008) identifies three types of interaction between words and pictures which will be taken into consideration for the analysis of the sampled children's books:

1. Symmetrical: Words and pictures have the same messages and the pictures support and reinforce the words. This is common in concept books where children are learning to read.

2. Complementary: Words and images are interdependent in the sense that words and pictures fill in each other's narrative gaps,

3. Contradictory: Words and pictures say opposite things, often for the creation of dramatic irony.

Picture books are not exempt from ideology as they can be deeply rooted in a sociocultural context. As Stephens points out (1992, p. 1) "language (and indeed any sign system, including systems of visual representation) is endemically and pervasively imbued with ideology". According to this argument, all the modes of representation in picture books are thus de facto laden with political and sociocultural meaning, which is even more significant in texts destined for children as these potentially represent a wide range of cognitive and affective tasks of childhood. This makes picture books, as CL, a valuable data set for study in this present doctoral research in terms of exploring the connections and relationships between NHA representations, children's literature and primary-school level textbooks, so as to gain an understanding of  representations of NHAs in the Mauritian context.

### 2.9.5 *Anthropomorphism in children's literature*

It has been proposed that from a very early age in life, humans have a natural affinity for animals (DeLoache et al., 2011), and the biophilia hypothesis spurred further research into the roles of NHAs (especially pets) on human development, by postulating that human evolution has developed within us an innate orientation towards and selective attentiveness to other life forms, other animals in particular. The salient and symbolic roles that NHAs play in children's lives can be observed not only through interactions with real world NHAs, but also through countless real and imagined representations in television programmes, animated cartoons, films, and video-games, as well as soft-toys and decorations on children's clothes and accessories (Melson, 2003). In addition, "the overwhelming majority of fairytales, fantasies, fables, story- books, and other literary genres associated with children are either about animals or feature animals as important central characters" (Serpell, 1999, p. 87).

The long-dated popularity of writing NHAs into stories and children's literature (Vogl, 1982) has a cultural and historical aspect to it. This is particularly evident in fables and myths. It is also unsurprising, given that our everyday lives are filled with NHAs, from living with them in our homes, to sharing our wider local urban and suburban environments with wildlife and NHAs in the countryside and woodlands. Given the prevalence of anthropomorphism as a natural and intuitive tendency, it is not surprising to find NHA characters in children's literature, and

> *this anthropomorphism is not limited to talking, but also includes wearing clothing, walking upright, cooking, playing instruments, and living in houses. Behaviourally, those non-human animals who are fully anthropomorphic are almost indistinguishable from humans; they go to school, drive cars, and deal with the same daily issues and concerns that humans have.* (Dunn, 2011, p. 2)

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These NHA characters have feelings and show emotions. In terms of common representations found in CL, some authors opt to retain some of the natural and real behaviours of the NHA, some writing of fully anthropomorphic animals who behave almost entirely as if they were human, while other authors provide stereotypical portrayals of specific NHAs.

NHA characters in children's literature are generally understood to be symbolic humans, meaning that through analogy, metaphor or similar, the NHA characters are simultaneously similar to and different from us (Mierek, 2010). According to Mierek (2010, p. 14), "anthropomorphism… is ubiquitous in world mythology, folklore, art, and literature… Particularly in literature for children, anthropomorphic tendencies are practiced uncritically in the creation of animal characters and stories with animals." As well as providing opportunities for developing empathy and association, such NHA characters also provide emotional distance for children with which they might identify, and onto which they might project themselves, without becoming too emotionally involved, especially when confronting difficult situations (Krueger & Krueger, 2005).

A recognition of anthropomorphism as a form of representation of NHAs has been taken into consideration for the sample of CL for data set 1. I have opted for a random sample of CL that includes anthropomorphic NHA characters and this will be further elaborated upon in Chapter 3. The following subsection discusses some aspects of what this doctoral study considers to be the most salient debates on anthropomorphic NHA characters in children's storybooks as well as the impact of anthropomorphic representations on children's learning and development. In relation to the present research questions, the impact of anthropomorphic representations on children's learning may influence the relationship between NHA representations in Mauritius and children's understanding of the ecosystem.

### 2.9.6 *Anthropomorphic NHA representations and impacts on learning and development*

The impact of a book on a child can be powerful and last a lifetime. Sara Friedman (2011) investigated the effects of anthropomorphic NHA characters on children's ability to learn social lessons from these picture books. In her research, Friedman (2011) made use of two commercial children's books, which were identical, except the trade edition featured NHA characters and the human character version of the book was made by scanning the original and changing the pictures of the characters. The study hypothesised that though children had an interest in NHAs the symbolic distance between the reader and the characters would impinge upon the didactic aspect of the children's ability to learn lessons from the book about sharing. Contrary to this however,

> *results showed that the children offered more sharing responses to hypothetical scenarios after having been read the book featuring animal characters, than the a [sic] book with human characters. The effect was enhanced if they responded to a hypothetical situation featuring humans after the book reading.* (Friedman, 2011, p. 3)

Therefore, the NHA representations in the book had a positive impact on the children's ability to learn social lessons.

Anthropomorphic NHA representations in CL may facilitate the learning of social lessons. In terms of culture, language, discourse, and representations, "animals may be a special kind of symbol that is easier for children to understand than other types of symbols" (Friedman, 2011, p. 15). This facilitation of learning can be correlated with Blanchard's (1984) proposition that the tendency to anthropomorphise, especially in young children, activates the human schemata and focuses attention and consciousness. Blanchard's (1984) research with 102 kindergarten children, showed the positive effects of anthropomorphic cues in word

learning and retention in young learners. However, Friedman (2011) conducted her research with a relatively small sample (thirty-two participants) which considerably limits the generalisability of her findings. In addition to this, since the story was only read once, which is not typical to children's general repetitive readings of storybooks, insufficient time was allocated for children's exposure to the book and for better internalisation of the sharing lesson which could have yielded richer results.

In contrast to Friedman (2011), Ganea et al. (2014) assessed the impact of anthropomorphic depictions and language on children's learning and knowledge about animals. The findings showed that anthropomorphic NHA representations affected children's tendencies to give anthropomorphic qualities to NHAs, which was considered as leading to less learning and influencing children's meaning-making with regard to knowledge about NHAs. However, the results of the study indicate some contradictions. For example, despite making the claim that children were less likely to learn factual information about animals when the picture books made use of fully anthropomorphic NHAs, also concurrently revealed that "anthropomorphic illustrations in and of themselves have little effect on the information children take away from picture books. Both 3-year-olds and 5-year-olds learned factual information from books with anthropomorphic pictures" (Ganea et al., 2014, p. 6).

Moreover, Ganea et al. (2014) make a rather superficial, causal relationship between anthropomorphism and anthropocentrism, presenting the former as a causal precursor to the latter, and establishing a negative correlation between anthropomorphism with anthropocentrism. This reductive perspective of anthropocentrism is used to suggest that "children are more likely to endorse anthropocentric traits for specific animals after being exposed to books that anthropomorphize those animals" (Ganea et al., 2014, p. 8). This reductive presentation of anthropocentrism fails to take into consideration other factors which

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are significant to the broad definition of the term as discussed in section 2.5, such as default anthropocentrism in contrast to utilitarian anthropocentrism.

Animism and anthropomorphism, present in many cultures across the world, is ignored by Ganea et al. (2014) who evidently hold the position that attributing consciousness and any human mental-ability to NHAs is a mistake and impacts negatively on children's learning, as these are exclusively human properties. However, adopting Martinelli's (2010) detailed understanding of anthropocentrism presented in section 2.5, and Mierek's (2010) explanation of NHA symbolism in section 2.9.5, it could be argued that by attributing anthropomorphic characteristics to NHAs an individual interprets the NHA as imbued with human consciousness, abilities, purpose, and intentions, and thus not opposed to or apart from humans but *as* a symbolic human.

For the purpose of this doctoral study, I do not share the reductive view that anthropomorphic or anthropocentric representations of NHAs impact negatively on children's learning about the ecosystem in Mauritius. As discussed in section 2.5, human representations are influenced by default anthropocentrism given our existence *as* humans, and may not be necessarily harmful. The focus of the study is on the language and discourse used for NHA representations in order to gain insight into the relationship between such representations and culture, as well as construction of knowledge about the ecosystem.

Section 2.10 below presents a summary of my key reflections on children's literature and NHA representations as discussed in this second part of the literature review. It includes a visual diagram (see Figure 4 below) synthesising how I have conceptualised the relationship between the child as meaning-maker, children's literature as polymorphous with a strong didactic element, and  representations (of NHAs) as having a transductive potential for the transmission of cultural values and knowledge about the world.

## 2.10 CONCEPTUALISING CHILDREN'S LITERATURE WITHIN THE BIOSPHERE

The model below (Figure 4) represents my conceptualisation of children's literature (CL) with respect to theoretical aspects pertaining to the biosphere. It is to be noted that my conception of the biosphere tallies with that of Morin (2008), in that it is inclusive of the anthroposphere, and thus, the noosphere. CL is polymorphous and deals with cultural functions and the transmission of values; it is deeply embedded within axiology, which feeds forward to the cultural dimension. This links to the idea of didacticism, whether active or passive, which is encompassed within CL. Hence, didacticism and cultural-axiological aspects are materialised in the education system through 'cultural didacticism', meaning that the didactic aspect permeates through CL, especially when it is used in the school context.

I conceptualise the child as an argumentative reader, who, as an active meaning-maker, has a high level of agency, and is able to interpret, act upon and transform texts via his/her transductive capacities. Through this potential, and through exposure to CL in the school context, the child is also able to construct his/her own representations and understanding of the ecosystem. The role of CL is therefore pertinent, especially in how information, stories and ideologemes are used in relation to the construction of representations of NHAs. Normalised anthropocentrism and speciesism in literature resources, for example, are thus considered as potentially having an impact on how these children construct meaning about and representations of NHAs. The third part of the literature review, which follows, orients the discussion to concentrate on didacticism, education, and curriculum in Mauritius, as well as the relationships with culture and representations of NHAs.

**Figure 4**

*Model of children's literature within the biosphere*
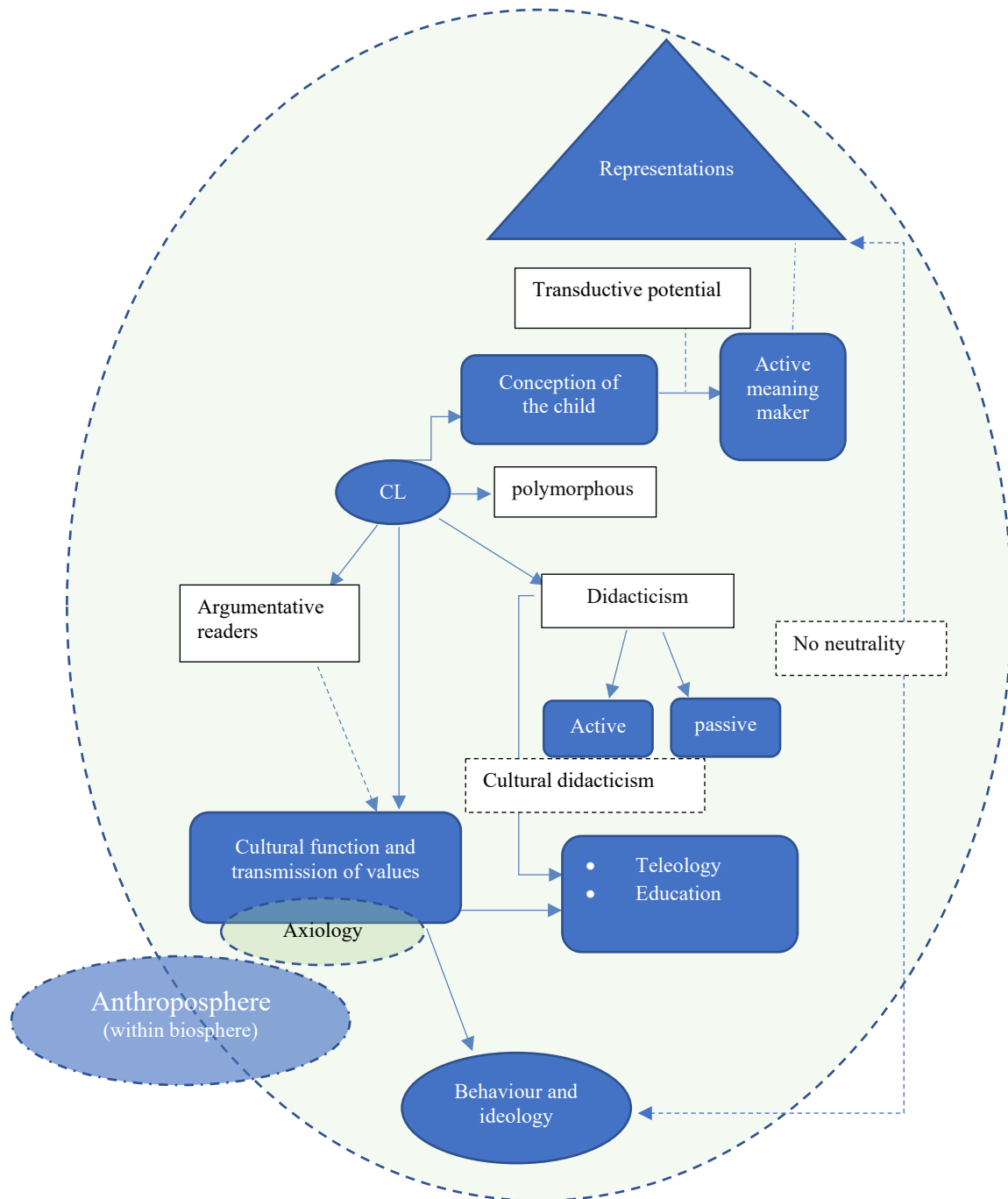
## 2.11 SOCIAL INTERACTION AND LEARNING: CULTURAL HISTORICAL ACTIVITY THEORY

Vygotsky's (1978) Cultural Historical Activity Theory (CHAT) provides some useful insights to begin this third part of the chapter on education and curriculum, and with regard to the cultural-symbolic dimension around reflections pertaining to education. Education is one of the areas necessitating urgent paradigmatic reform in order to touch upon issues that relate to human relationships with the environment, such as living sustainably and caring for ecosystems. One of the foundational premises of CHAT, as an educational theory, is the anti-dualist posture, which corresponds with the general ecological paradigm.

While reflecting on a unified framework aiming to study human consciousness, Vygotsky (1978) asserts that the "organism and the environment were parts of a complex system that co-created consciousness through human participation in activities" (as cited in Yamagata-Lynch, 2010, p. 15). The bi-directional relationship between 'action' and 'cognition' is transparent, and it is possible to draw parallels with Stibbe's (2015) notion of 'story', which are cognitive structures in the minds of individual people influencing how they perceive the world. With these two arguments in mind, there is a strong basis to suggest that the collective consciousness and how individuals act towards the world, and hence others (inclusive of NHAs) are mutually determining.

One of the founding principles of CHAT is the concept of mediated action, which is a semiotic process enabling the emergence and development of human consciousness via multidimensional interactions with tools, artifacts and social others in an environment. This process allows individuals to actively construct meaning of their world. Concomitantly, individuals also act upon and modify their environment. To explain the process of mediated action, Vygotsky (1978) uses a triangle with three vertices: subject, mediating artifact/tool, and

object. Individuals taking part in the meaning-making activity are the subjects, while the object is the goal of the activity. The mediating artifact/tool can be in the form of social others, prior knowledge, or objects that have an incidence on the individual's experiences within the activity in question. I argue that the social other can also extend to NHAs.

As Yamagata-Lynch (2010, p. 17) point out, "human activity is a process that involves artifacts that act as technical tools and signs that act as psychological tools available in the social environment". It should be noted that the term 'technical tool' tends to imply a form of generalised reification of the artifact. However, this should be nuanced, as the artifact can be polymorphous and can represent humans as well as non-humans. Through the social, cognitive consciousness, and sustained use in interpersonal communication, artifacts are transformed into cultural tools. A cultural tool is "an artifact that has gained value within participants' activities" (Yamagata-Lynch, 2010, p. 17). This can be mapped onto my reasoning to extend the concept of the mediating artifact/tool in the form of NHAs *as* social others. Children, for example, attribute cultural values to NHAs, as cultural artifacts, through their interaction with others, via different types of activities, which could be speech-related or action-related.

I now provide an example of how NHAs could be considered as cultural artifacts, within CHAT, and how the same reasoning can be applied to classroom activities, where children interact with their peers and with their teachers via mediating artifacts/tools. In my personal experience, one pre-primary classroom observation concerned a discussion activity around the topic of sharks, with the 'object' of the mediated action was learning about sharks and drawing them. The teacher repeatedly associated the shark with danger and human killings. This directly influenced the process of meaning-making for the children and oriented them towards negative value attribution to the shark. This aspect links to what Vygotsky (1978) calls internalisation, which is a concept explaining the development of consciousness at individual level. As he points out, "every function in a child's cultural development appears twice: first on the social

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level, and later, on the individual level; first between people (inter psychological), and then inside the child (intra-psychological)" (Vygotsky, 1978, p. 57).

Societal interactions are therefore fundamental in how the child constructs his consciousness. Education, in this respect, and whether it is formal or informal, plays an important part in how the child develops his knowledge and, subsequently, acts upon it, and acts towards others. This is potentially significant in relation to their construction of knowledge about culture, NHAs and the ecosystem, the language and discourse they use to construct representations of NHAs and the ecosystem, and how such language and discourse, in turn, forms the world around them. This is a particularly important consideration for reflecting on a model of curriculum material writing and development that integrates an understanding of NHAs within a more ecologically responsible framework for the educational and cultural context of Mauritius.

## 2.12  REFLECTIONS ON THE CURRICULUM IN THE MAURITIAN LANDSCAPE

Building on the above discussion of CHAT, children's learning through social interaction and mediated action, this section now provides a critical reflection on the Mauritian curriculum for primary school level. The critical reflection aims to gain insights into the potentialities of integrating eco-responsible thinking, discourse, and activities in Mauritius.   In the Mauritian context, the National Curriculum Framework Primary (NCFP; MoE, 2015) presents the curriculum as being 'integrated', however, this concept is not sufficiently defined and elaborated upon in the NCFP (MoE, 2015). For the purpose of this doctoral study, it is important to gain an understanding of what an integrated curriculum means and situate it within the context of my discussions around CL and NHAs.

This section will draw upon the work of Drake and Burns (2004), who discuss the macro-concept of 'integrated curriculum' within a context of accountability and standards-

building. The key concepts and designs were read alongside the work of Miller et al. (1990) in relation to holistic education and integrated studies, DeRoche and Williams (2001) for how curriculum design can take into consideration education for children's hearts and minds, and Jacobs (1989) on designing and implementing interdisciplinary curricula. The core of the integrated curriculum is establishing connections. This can be likened to the concept of complexity, the etymon of which means 'that is linked together', from the Latin word *complexus*. An integrated curriculum design attempts to take into consideration the complexity, which characterises an educational landscape, and which is an articulation point for various ethno-socio-cultural elements. As such, the integrated curriculum can be classified into three broad approaches: multidisciplinary, interdisciplinary, and transdisciplinary. A brief overview of each broad approach is subsequently provided.

The focus of the multidisciplinary approach is about the integration of subdisciplines within a subject area. While Drake and Burns (2004) cite the example of using oral and written communication in language arts, I argue that they do not represent 'sub-disciplines' but competencies and skills which permeate through any taught subject, with the main medium of teaching being language. Therefore, Drake and Burns' (2004) example of the integration of geography, history and economics within the social sciences is more pertinent. Multidisciplinary integration is further divided into different sub-approaches; however, I will not be delving further into these as I have identified that the Mauritian curriculum attempts to fit more into the interdisciplinary framework, at least at policy-level.

The multidisciplinary approach conserves clear disciplinary boundaries, with different subject-area knowledge being used to study a theme, the interdisciplinary approach, on the other hand, attempts to make the disciplinary frontiers at least semi-permeable. Within interdisciplinary integration, teachers chunk together common learnings embedded within the disciplines (Drake & Burns, 2004), and the example they use to illustrate this approach is a

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context where children are making wind and rain machines while concomitantly being engaged in meaningful topic-driven communication,  writing reports, and exploring scientific concepts like evaporation. Such concepts are invested in other disciplines and areas of learning. The basis of this approach is learning concepts beyond the immediate lesson.

While the Mauritian curriculum (MoE, 2015) attempts to be at least interdisciplinary in nature, observations in schools in the context of my professional duties reveal that the teachers are not able to operate in a space which allows the realisation of an interdisciplinary framework. This is partly due to syllabus-based constraints in the local context and therefore reflections on how to weave ecologically responsible activities and discourse into current educational system are increasingly germane to Research Question 5 of this study. In order for curriculum development practices to move towards more ecologically responsible education, inclusive of ecologically beneficial discourse (Stibbe, 2014) on nature and NHAs, it may be necessary to consider a reformist paradigm (MacNaughton, 2003) that would enable a transition into interdisciplinary curricula in Mauritius.

The transdisciplinary approach draws from interdisciplinarity, with a more 'critical' and student-centred orientation, as the curriculum is organised around student questions and concerns. According to Drake and Burns (2004), there are two routes which lead to the realisation of the transdisciplinary approach: project-based learning and negotiating the curriculum. Project-based learning allows higher engagement from learners who go beyond the minimum required effort to construct understanding of phenomena. Negotiating the curriculum involves the edification of the curriculum from students' questions so the curriculum is designed democratically.

The table 2 below (adapted from Drake & Burns, 2004, p. 17) illustrates the main elements of the three approaches pertaining to the integrated curriculum (Thornburn & Collins,

2003). All three approaches are based on a constructivist approach that favours inquiry and experiential learning. They also allow the space for the learner to integrate personal relevance and advocate differentiated instruction. Understanding these constructivist approaches to the three main curriculum models is essential, especially in view of the thesis aims which are geared towards trying to understand the ways in which ecologically responsible education can inform curriculum material writing and curriculum development practices in Mauritius, particularly in respect to representations of NHAs and reflective ecologically responsible discourse.

**Table 2**

*Key elements of the 3 approaches of an integrated curriculum*

|  | **Multidisciplinary** | **Interdisciplinary** | **Transdisciplinary** |
|---|---|---|---|
| **Organising centre** | - Standards of the disciplines organised around a theme | - Interdisciplinary skills and concepts embedded in disciplinary standards | - Real-life contexts<br>- Student questions |
| **Conception of knowledge** | - Knowledge best learned through the structure of the discipline<br>- A right answer<br>- One truth | - Disciplines connected by common concepts and skills<br>- Knowledge considered to be socially constructed<br>- Many right answers | - All knowledge interconnected and interdependent<br>- Many right answers<br>- Knowledge considered to be indeterminate and ambiguous |
| **Role of disciplines** | - Procedures of discipline | - Interdisciplinary skills and | - Disciplines identified if desired, but real- |

| | | | |
|---|---|---|---|
| | considered most important<br>- Distinct skills and concepts of discipline taught | concepts stressed | life context emphasised |
| **Role of the teacher** | - Facilitator<br>- Specialist | - Facilitator<br>- Specialist/ generalist | - Co-planner<br>- Co-learner<br>- Generalist/ specialist |
| **Starting piece** | - Disciplinary standards and procedures | - Interdisciplinary bridge<br>- Know/ Do/ Be | - Student questions and concerns<br>- Real-world content |
| **Degree of integration** | - Moderate | - Medium/ intense | - Paradigm shift |
| **Assessment** | - Discipline-based | - Interdisciplinary skills/ concepts stressed | - Interdisciplinary skills/concepts stressed |

*Note*. Adapted from Drake & Burns (2004, p. 17)

As discussed in Chapter 1, one of the major attempts at moving towards a truly integrated curriculum at lower primary level in Mauritius came with an effort to deload the curriculum. This was a national project where the government aimed to decrease curriculum load on young learners through an approach that would seamlessly integrate the competencies to be acquired. The educational project that was developed in relation to this was the Foundation Year Project (FYP) and the initial textbook which emerged from this project was *Let's Learn with Timatou and Friends*, which, despite condensing the principles of an interdisciplinary approach, failed in the Mauritian context. This textbook is particularly relevant in the context of this work as part of the failure is also attributed to the NHA characters, and the multiple representations associated to them.

The main idea underpinning the now defunct textbook corresponded with the philosophy of an interdisciplinary approach to curriculum. All the major learning areas in literacy (in English, French, and Kreol Morisien) and numeracy were contained within a single textbook, with relevant disciplinary connections. This textbook is a prime example of the intricacies concerning representations, culture and NHAs in the context of curriculum development in Mauritius. It is particularly relevant to my doctoral work as it illustrates how representations of NHAs can have an impact on curriculum and textbook development at different levels, including at national policy level. Even though the project was innovative in many respects including the linguistic dimension through the use of a bi/trilingual approach (Rughoonundun-Chellapermal, 2017), for the purpose of this part of the literature review, I build on the initial discussions presented in Chapter 1 and focus on key aspects which deal with NHAs and the impact on curriculum development.

In 2013, the Ministry of Education mandated the Mauritius Institute of Education to review the National Curriculum Framework with the objective of consolidating the foundations and ensuring a smooth transition between pre-primary and primary schooling. Language, numeracy and integration were the foci of the project, which had three main guiding principles: reduction of failures at Certificate of Primary Education (CPE) level, continuity between and within cycles of pre-primary and primary education, and equity and justice (Rughoonundun-Chellapermal, 2017).

In relation to the notions of integrated curriculum and interdisciplinarity, the general curricular approach was theme-based rather than discipline based and converged towards integration. According to Rughoonundun-Chellapermal (2017), the idea of an integrated curriculum emerged from the consideration of many factors: learner profiles, learning modalities, stress from the pre-primary to primary transition and experience at school. Four aspects formed the basis of the curriculum: personal and social development; language and

literacy; logical and creative thinking (including numeracy); physiological and motor development (including hygiene and food).

### 2.12.1 Non-human animals and the Foundation Year Project

One of the main features of the FYP was the presence of NHAs as the main characters of the textbooks. The choice of anthropomorphic NHA representations as main characters was motivated by pedagogical as well as socio-contextual considerations. However, ethno-socio symbolic pressures led to the erasure of both the pig and the tenrec in the textbook, as discussed previously in section 3.6.7 . A brief analysis of the events in terms of the triangle of representations (see Appendix B) adds to the discussions in the introduction chapter and reveals that ideology, discourse and opinions had a significant impact on how the textbook was conceptualised, especially with respect to the content and representations of NHA characters.

This is an illustration of an important paradox. Theory and literature point to the advantages of using NHAs and anthropomorphic representations in conceiving material for children, especially children's literature as discussed in section 2.9.5.1. Another paradox, as reported by Rughoonundun-Chellapermal (2017), concerns opinions and ideologies that are not necessarily representative of large groups; the pressure arose only from restricted groups who operate at the level of decision making. As a result, contextual ethno-socio symbolic representations determined the direction of the content, which affected the integrated curriculum design and choices. Since then, the educational reform in Mauritius has reoriented the conceptualisation of the NCFP (MoE, 2015) and curriculum philosophy more towards holistic education.

## 2.13 HOLISM AND HOLISTIC EDUCATION

Holism is the philosophy underpinning Holistic Education (HE), which is an important educational perspective in relation to aims of this doctoral study for understanding

representations of NHAs from ecological, cultural, and literary viewpoints, and proposing a model of curriculum that integrates more ecologically responsible discourse, representations, and activities. HE is a philosophical approach to education that seeks to engage all aspects of the learner, including mind, body, and spirit, based on the belief that people find a sense of identity, belonging, meaning, and purpose in life through connections to self, the community, society, the natural world, and to values such as compassion , empathy and peace. The term holism signifies "whole", and the word was given currency by Smuts (1926, p. 98) who asserted that there is "the tendency in nature to form wholes that are greater than the sum of the parts through creative evolution". According to Smut's (1926) theory of holism, this principle pervades every stage of evolution at the level of physical matter, cell, organism, human personality, community, society, country, and beyond. The point of articulation for the concept of holism is, therefore, the whole.

From this radical definition, holism has taken various meanings through semantic extrapolation. Another meaning of holism, from a more eco-systemic point of view, perceives the universe, and more specifically nature, in terms of 'interacting wholes' which are themselves greater than the sum of each elementary particle. In this sense, holism, as a concept, is a form of critique against reductionism (reducing a complex system to its fundamental parts) and mechanism (explaining all natural phenomena with reference to mechanical processes, which in itself is a form of reductionism).

HE stems from this overarching concept of holism and encompasses an eclectic range of philosophical orientations and pedagogical practices. Though it does not have a single source, it emerged as a response to the fragmented and reductionistic assumptions of 'mechanistic' mainstream culture and education (Schreiner et al., 2005), with the underlying principle that education, and thus learning, is most effectively acquired in a holistic manner

where individual parts of knowledge are connected to each other synergistically. However, there is no universal definition of holistic education, but the notions of harmony, wholeness, and interconnectedness of experience are common threads.

Holistic education (HE) strives to go beyond the three Rs of reading, writing, and arithmetic, as well as beyond the three Ls of language, logic, and linearity to ensure that there is no aspect of the individual, most especially the inner self, which is neglected (Holdstock, 1987). While there is no unanimous agreement on a definition for holistic education, it is evident in the literature that rather than being concerned with basic competence, knowledge and skills acquisition, this philosophy of learning is principally concerned with the inherent potential and overall development (physically, intellectually, emotionally, and spiritually) of the individual. The objective, and highest goal, of holistic education is thus, as Forbes (2003, p. 17) states, 'ultimacy' (akin to enlightenment or self-actualisation) and is defined as "the highest state of being that a human can aspire to."

In the local context of Mauritius, the Teacher's Diploma Primary Holistic Education (TDPHE) was introduced into the educational system in January 2017. Trainee-teachers began following the diploma course in that same month and, upon completion, they will go on to teach art, drama, music, health and physical education, values, and citizenship education in line with the NCFP (MoE, 2015) for Mauritius. This new holistic education programme provides an opportunity for the integration of holism's underlying philosophies such as cosmocentrism, ecological worldviews, and interconnected levels of wholeness.

Deeper insights and reflections on representations of NHAs and the dialogical relationship between these and learning, grounded within the specific cultural context of Mauritius, become of national significance. Most notably, the holistic education programme provides a potential space, in terms of teacher training as an extension of the second aim of this

doctoral study, for reconfiguring the educational system towards more ecologically responsible discourse and activities, and a more transformative paradigm and interdisciplinary curriculum as discussed in section 2.12 above.

HE provides an interesting and valuable pathway for the integration of ecologically responsible discourse, language, and representations of NHAs, via teaching and learning processes that encourage personal and collective responsibility, as well as the aim to nurture intrinsic reverence for all life and an empathic understanding of the interwoven connection amongst all things in the natural world, both human and non-human. The holistic education diploma, however, is not without its internal challenges and contradictions; a number of epistemological challenges were encountered in the process of the conception of the TDPHE programme, as there is a disjunction between holistic education teachers and general purpose teachers in the local context (Hookoomsing & Oozeerally, 2018).

In the first instance, the disjunction is visible in how HE teachers (teaching 'non-core' subjects, as they are commonly referred to in Mauritius) are distinct from General Purpose (GP) teachers (who teach the 'core' subjects of English, French, Mathematics, Science, History and Geography), thereby creating a disjunction between holistic and 'non-holistic' teaching. This appears to be a problematic contradiction as all teachers, irrespective of the subject areas they teach, are expected to adopt a holistic approach in teaching as per the NCFP (MoE, 2015). In the second instance, a set of questions emerged for further reflection regarding the epistemological conception and limitations of holism *per se*.

This thesis, therefore, contributes towards extending the discussion of HE in Mauritius, and provides insights and knowledge useful for the development of teacher training for the holistic education diploma programme. As a research aim, the development of teaching training

contributes towards reconceptualising ecologically responsible holistic education that could, potentially, be used by both HE and GP teachers at primary school level.

## 2.14  CHAPTER CONCLUSION

This literature review chapter was divided into three main parts and discussed the main philosophical and epistemological postulates transversal to this thesis, thus establishing the theoretical grounding of the study. Theoretical elements pertaining to culture, language, representations, curriculum and holistic education were read against the anthroposphere-biosphere divide. The conception of the child and role of children's literature as an important repository of didactic and cultural information were discussed and contextualised with respect to the research objectives and questions of this study.

These discussions inform my methodological choices which are detailed in the next chapter. Specifically, and in addition to outlining the key choices and methodological considerations of this study, chapter 3 provides details on ecolinguistics and the main theoretical work of Stibbe (2015), which has been used as the principal foundation of the theoretical framework for this research.

Chapter 4 focuses on ecolinguistics, not only as a field of linguistic study, but going beyond that, and using ecolinguistics to represent a fulcrum, or central element, which allows me to articulate the points discussed above in relation to my methodology and analytical framework. The chapter presents the ontological and epistemological posture, positions ecolinguistics as a set of theoretical and methodological principles central for my reflections, and uses the "stories we live by" framework of Stibbe (2015, p. 3) as the anchor point to explicitly articulate the theoretical discussions in relation to the methodological dimension of this doctoral study.

## 3    INTRODUCTION AND OVERVIEW

This methodology chapter builds from the broad theoretical framework of language-culture-representation and education presented in the literature review and anchors the theoretical and conceptual dimension of the research in ecolinguistics. I consider ecolinguistics not only as a field of study within linguistics, but as a paradigm, thus forming the overarching methodological approach for this study. Multi-layered and  multi-faceted elements have been considered with regard to the development of this ecolinguistics paradigm, which allows me to articulate the conceptual elements discussed in Chapters 1 and 2, in relation to ontological and epistemological standpoint, data collection choices, and method for analysis.

Chapter 3 has allowed me to orient my reflections around the relationship between humans and NHAs whilst integrating the educational dimension, especially in view of proposing an ecologically responsible and meaningful education for children. Stibbe's framework (2015) is an essential element in how the research data will be analysed, and sheds light on text and discourse analysis and how principles pertaining to the ecological paradigm can be coherently integrated into the research. For this reason, a considerable section of the chapter focuses on Stibbe's (2015, p. 3) ecolinguistic framework for "stories we live by", as the central method of analysis for texts specifically and, for discourse, more generally, in combination with thematic analysis.

This chapter is essentially composed of two interconnecting parts. The first part presents the philosophical considerations of the study, in terms of ontological and epistemological perspectives, and how they fit with the choice of research tools. The second part focuses on the predominantly qualitative research design, which combines multiple ways to explore the research problem. As a broad overview to situate this multiplicity, this study

made use of three sources of data collection in terms of (i) text analysis for children's literature (CL) and textbooks, (ii) group interviews with child participants, and (iii) accounts gathering with adult participants. In detailing these data collection sources, the second part of this chapter discusses sampling, outlines the research methods, and elaborates on the eco-critical discourse analysis as the analytical approach for the data gathered. The chapter then addresses the validity and reliability of the research, before concluding with ethical considerations.

## 3.1   ONTOLOGICAL AND EPISTEMOLOGICAL STANDPOINT

As presented in Chapter 2, the paradigmatic alignment of this research is on ecolinguistics, which articulates the theoretical and methodological reasoning of the study. Constructionism is an ontological position which considers social phenomena and their meanings as being continually accomplished by social actors, and not existing externally or independently as social entities (Bryman, 2012); as such, ecolinguistics encapsulates and integrates principles from the standpoint of social constructionism and symbolic interactionism, and can be mapped onto the interpretivist paradigm.  In broad terms, the interpretivist paradigm does not consider society as a fixed structure, but created by the deliberate and meaningful interactions of individuals who use and change socio-cultural norms and values as part of their daily lives (Bartlett & Burton, 2007). This is aligned with the general theoretical framework of this study in relation to reality being viewed, ontologically, as socially co-constructed, rather than matched to a set of rules, and that reality is multiple and relative, as opposed to fixed and objectively determined.

Interpretivism, as paradigm and epistemological assumption, generally focuses on the process by which meanings are created, negotiated, sustained and modified (Schwandt, 2003), so as to understanding the world of lived experience from the perspective of the social actors who live in it. This aligns with the research aims for this study and the socio-culturally co-

constructed nature of culture, discourse, and representations as discussed in the literature review. Within an interpretivist paradigm it can be argued that reality is viewed as subjective to heterogenic, time, and context bound experiences (Carson et al., 2001; Robillard, 2008). Therefore, the epistemological standpoint of this doctoral research is that knowledge is inductively created and focuses on personal individual perspectives, experiences, and engagement with the phenomena of representations of NHAs, within the context of Mauritius and, more specifically, within the primary education context of the country.

The ontological standpoint of this study encompasses two dimensions, the first being the ontological stance of the researcher, and the second being the mode in which 'the researched' is being conceived in terms of reality. The researcher, as a multi-faceted individual operating in society and having different identities (Skutnabb-Kangas, 2000), has a direct influence on how the research is conceptualised. Robillard (2008) evokes the concept of 'micro-historicity' (French: *micro-historicité*), stating how experiences of the researcher shape his/her view of reality and subsequently affect the nature of the research. Regarding these notions of positionality and researcher influence, my own experiences, including my academic journey, have led me to adopt a posture which is inclined towards a subjectivist approach.

Jaccard and Jacoby (2010, p. 7) mention the social constructionist perspective which "holds that reality is a construction of the human mind, that this construction is tied to a particular time and social context and that what is considered reality changes as the social context changes." Social reality is therefore dynamic and co-constructed by social beings; correlatively, the ontology and epistemology of the researcher has direct repercussions on how the nature of the 'researched' is perceived. In other words, there is a bi-directional (i.e. functioning in two-directions), co-determining relationship between the ontological posture of the researcher and the ontic conceptions of the researched. This general posture has allowed

me to orient my reflections on the ecological paradigm as a set of theoretical, ontological, and epistemological principles, which I discuss in section 3.2.

### 3.1.1 Ethnomethodology

In the context of this doctoral research, elements from ethnomethodology also appear pertinent, as ethnomethodology is a school of thought, within the interpretivist paradigm, concerned with interactions of participants in a social encounter, including their assumptions, practices, and conventions. The notions of reflexivity and indexicality are particularly useful in relation to ethnomethodology (Pillay, 2019). Reflexivity refers to how accounts of social contexts influence and are influenced by the social context itself, and it explains the relationship between micro/meso-social productions, and the constitution of the macro-social context. Indexicality refers to the socio-contextual embeddedness of statements and actions, and the way in which the meanings are co-constructed and shared by participants, even though there may be no explicit statement. Thus, any form of effective language production and linguistic symbolic-meaning-attribution is anchored in a social context. Ideologically laden linguistic or textual representations of NHAs for example, would thus be considered as stemming from the interpretation of knowledge pertaining to socially rooted cognitive capital (Morin, 2007).

Ethnomethodology, as a qualitative methodology for studying social life, is relevant to the cultural focus presented in this research in relation to representations, the expanded understanding of culture within the noosphere presented in section 2.9 of the literature review, and to an ecolinguistic paradigm. Additionally, as ethnomethodology studies the norms and rules of everyday face-to-face behaviour, which people interpret in socially interactive situations so as to construct meaning, it is a useful methodological reflection point for the education dimension of this research.; as argued in Chapter 1, education is situated to play a vital role in how we learn about the world in which we live.

## 3.2 EPISTEMOLOGICAL AND ONTOLOGICAL UNDERPINNINGS OF ECOLINGUISTICS

Ecolinguistics, as a field of study which merges ecology and linguistics, draws attention to the limitations of modern linguistic theories and models with respect to their characteristic closed framework. Bang and Trampe (2014, p. 83) put forward the notion that ecolinguistics is a broad umbrella term which applies linguistic methods to ecologically important texts and discourses, but that also applies to "deeper reflections on the theories of language inspired by the holistic paradigm of ecology." However, it is the definition of Alexander and Stibbe (2014, p. 105) which is most pertinent for this study, as they present ecolinguistics as "the study of the impact of language on the life-sustaining relationships among humans, other organisms and the physical environment. It is normatively orientated towards preserving relationships which sustain life".

This definition aligns with my research aims and objectives and is considered to be the most relevant for understanding ecolinguistics as a paradigm because:

a) ecology is considered literally rather than understood as, and reduced to, 'ecology of language',

b) it sets clear boundaries to remain within the purview of linguistics and, simultaneously, remains sufficiently open for interpretation to allow for a variety of approaches and topics/issues,

c) the element of the interhuman relationship is included which is particularly valuable in relation to human representations of NHAs and the relationships with culture and construction of knowledge about the biosphere,

d) there is importance given to life-sustaining relationships and emphasis on such positive possibilities, which is essential in relation to the scope of the research aims for proposing more ecologically responsible education in Mauritius, now and in the future.

In contrast to mainstream linguistics, ecolinguistics stresses the dynamic interactions between the human communicator and the multi-layered communication context. Such an approach integrates principles of systems theories and complexity (Bang & Døør, 2007; Morin, 2008); it restores the communicator as an important part of the communication experience, a perspective which is opposite to that of traditional structuralist linguistics where the communicator has little to no importance, the main focus being the 'language product'. Humans are not considered as passive elements reducible to 'variables', but as complex beings, and this perspective is shared by Stibbe (2015) in his explanation of the theoretical underpinnings of ecolinguistics.

Methodologically, the ecolinguistic perspective is useful as it allows me to integrate text analysis (Bang & Døør, 2007; Stibbe, 2015), language mediated observations, and accounts gathering. Methodological principles regarding both types, that is multimodal discourses (Stibbe, 2015) and texts, form part of my 'object' of research. The diagram below (Figure 5) illustrates my reasoning:

**Figure 5**

*Ecolinguistic perspective for integration of multimodal discourses and texts*

```
┌─────────────────────────────┐          ┌─────────────────────────────┐
│  Cultural dimension (cognitive │          │  Relationships with animals/  │
│  machine, collective cultural  │          │  representations thereof       │
│  capital, cognitive patterns)  │          │                                │
└─────────────────────────────┘          └─────────────────────────────┘
               │                                      │
               ▼                                      ▼
                        ╭──────────────╮
                        │ Ecolinguistics │
                        ╰──────────────╯
                               │
                               ▼
                   ┌─────────────────────────────┐
                   │ Manifestations in discourse  │
                   │ through language              │
                   │ Methodology                   │
                   └─────────────────────────────┘
```
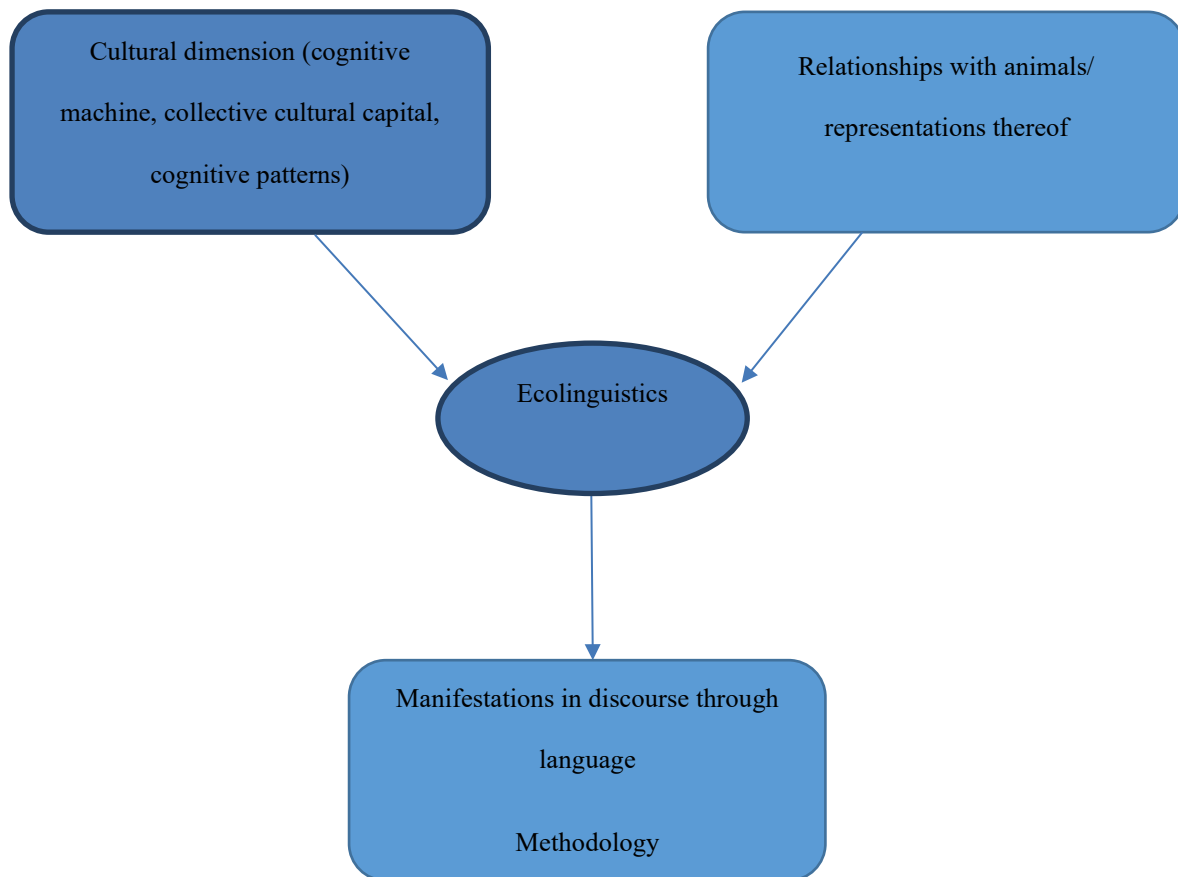
Ecolinguistics is rooted in the constructivist-interpretivist frame of thought, where individuals not only construct their social environment, but manifest intentionality in their actions and create meanings (Becker, 1970; Blumer, 1969; Garfinkerl, 1967 as cited by Cohen et al., 2007). Being fundamentally interdisciplinary in nature, ecolinguistics integrates elements from social constructionism and symbolic interactionism; this aligns with the discussion on culture and NHAs in the previous chapter. The research tendencies associated with ecolinguistic reasoning are analogous to qualitative, naturalistic, and interpretive approaches. Contexts and practices are perceived as being dynamic, and in chronological movement. In relation to subjective and inter-subjective constructs, including interpretation and symbolic

value attribution, ecolinguistics takes into consideration issues like non-generalisability (Bang & Døør, 2007), which is important given the research methods and sampling in the context of this study. My research is rooted in the Mauritian educational landscape which has its own specificities; results cannot therefore be generalised, especially given that my research design is fundamentally qualitative; though the sample is representative of the multicultural and multilingual context of Mauritius, it is a small sample size. wider population.

Furthermore, Berman (2001) and Stibbe (2015) also stress that the way we perceive and represent nature has a direct impact on how we act towards it, and the notion of representation is deeply embedded in the ecolinguistic approach (Stibbe, 2015). Given the significance of representations, the ecolinguistic paradigm integrates interactive approaches to methodology, such as eco-critical discourse analysis, and is therefore relevant and valuable for the general theoretical framework of this study. The benefits of methodological flexibility afforded by the ecolinguistics paradigm enable me to utilise different modes of data collection and gain different perspectives on key themes.

## 3.3    SAMPLING STRATEGY AND SAMPLE SIZE

As this is a predominantly qualitative research design, sampling considerations were taken to ensure that there were sufficient participants to allow for theoretical relevance. The research does include a small element of quantitative inquiry in the sense that all 12 of the existing primary school textbooks for English, French, and Kreol Morisien were analysed for Research Question 2 (How are NHAs represented in the curriculum textbooks for Grades 1 and 2 in Mauritius?). There had also been an initial intent to undertake a survey with primary school trainee-teachers, via a questionnaire, but this data has not been used; the reasons for this are discussed below.

Though this study does not aim for a broad generalisation of findings, a mixture of both random and purposive sampling strategies was used for different methods of data collection to seek a minimum form of representativeness of the wider population and to reduce the risk of bias (Cohen et al., 2015). However, the study does aim for theoretical relevance in terms of contribution to knowledge in ecolinguistics within a new empirical context across multiple data sets. Table 3 below provides an overview of the complete range of methods and sampling used.

**Table 3**

*Overview of research methods and sampling*

| Sample | Sampling strategy | Data collection tool |
|---|---|---|
| 9 children's books | • Random<br><br>- 3 in English<br>- 3 in French<br>- 3 in Kreol Morisien | • Text analysis<br>• Eco-critical Discourse Analysis |
| 12 Grades 1 and 2 textbooks | • Purposive<br><br>6 Grade 1 textbooks:<br>- Part 1 and Part 2 English<br>- Part 1 and Part 2 French<br>- Part 1 and Part 2 Kreol Morisien<br><br>6 Grade 2 textbooks:<br>- Part 1 and Part 2 English<br>- Part 1 and Part 2 French<br>- Part 1 and Part 2 Kreol Morisien | • Text analysis<br>• Eco-critical Discourse Analysis |
| 79 primary school children | • Random stratified<br><br>- Grade 1 pupils in 4 schools<br>- 1 school per 'Educational Zone' | • Group interviews |

| 10 Textbook writers and curriculum developers | • Purposive <br><br> - English, French and Kreol Morisien textbook writers/curriculum developers | • Accounts gathering |
|---|---|---|
| 98 Holistic Education trainee teachers | • Purposive | • Questionnaire |

### 3.3.1   Purposive and simple random sampling of materials for text analysis

The didactic link between CL and language curriculum, as discussed in sections 2.9 and 2.9.1 of the previous chapter, helped me to constrain the sampling of materials for text analysis. From the sample population of primary school textbooks, this research limits itself to a purposive sample of English, French, and Kreol Morisien primary school textbooks for Grades 1 and 2. This adds a small quantitative dimension to the research, though the overall approach remains qualitative in nature, as the purposive sample consists of all the 12 existing textbooks for these aforementioned language subject areas.  As for CL, a simple random sample of children's books aimed at 4 to 6-year olds, written in the three main languages of English, French and Kreol Morisien was selected. Even though Kreol Morisien is not a compulsory subject at primary level like English and French, it has been introduced in the educational system of Mauritius as an optional language on par with ancestral/vernacular optional languages. I will consider it with respect to its sociolinguistic status as the language most widely spoken in Mauritius (Central Statistics Office, 2011).

The sampling of CL was carried out in two tiers; a purposive sample of bookstores was selected based on size with larger stores being chosen on the basis of having a wider variety of books. Visits were made to three of the largest bookstores in Mauritius, located in three

different towns. The staff and/or store managers of these bookstores were then asked to identify or check on their systems which were the most popular children's books sold that specifically featured NHA characters. In all three stores the staff said they could not identify this on the system but gave their suggestions on the most sold books based on what they had to restock on the shelves. From this the second tier of sampling was carried out via a random sampling of the CL that the bookstore staff presented as popular book purchases. A random sample of three CL, one in English, French, and KM respectively, was selected in each of the three stores to form Data Set 1. The sampling was not planned with cultural or didactic assumptions with regard to CL in Mauritius. Instead, the approach to this random sample of CL with NHA characters was thus based on what the bookstores considered to be popular from a sales perspective, in terms of quantity of book sold and restocking on the shelves.

For the purposes of feasibility and construct validity (i.e. the degree to which inferences can legitimately be made from the operationalizations in the study to the theoretical constructs on which those operationalizations were based; Trochim, 2020), three children's literature books in each language have been chosen, for a total of nine books. As the sample population concerns children of Grades 1 and 2, the choice of books is targeted for children of this age group. However, it is important to clarify that while the didactic link between CL and textbooks for children helped me to constrain the sampling, the choice regarding types of CL is not restricted to children's books that are solely meant to be integrated into textbooks or other curriculum materials for primary school; the random sample of nine children's books in the three languages also includes CL that does not necessarily have an explicit didactic component and is meant to be read for pleasure by children or to children (texts which adults read for them). This will facilitate my interpretation from a pedagogical perspective, including vocabulary development and the nature and purpose of the books themselves.

### 3.3.2 *Simple random sampling of primary schools and children for group interviews*

Simple random sampling was used to sample participant primary schools from the wider population; the population in this case being all the 'State Primary Schools' in Mauritius. Mauritius is divided into four Educational Zones. A complete list of all primary schools was divided into the four Educational Zones, and one school was randomly chosen from each zone for representativeness. At the time of carrying out the research, there were seventy-two 'State Primary Schools' in Zone 1, fifty-seven in Zone 2, forty-eight in Zone 3, and thirty-four in Zone 4. Each list was then cut up into strips with the schools' names and placed into four separate containers. One school was then randomly chosen from each container to make up the random sample.

From this random sample of four schools, one in each Educational Zone, a purposive sample of pupils between the ages of five and six years, in the first year of primary (i.e. Grade 1), was selected as the subgroup within those schools. Children of this age-range were selected for the purposive sample, because this study considered this to be a significant stage of early literacy experiences in the education system of Mauritius which would be valuable in relation to representations of NHAs and construction of knowledge about the biosphere. It is at this age in Grade 1 where children are introduced, more formally, to representational elements transmitted by various media, notably children's literature, via stories.

Since the 2014 educational reform, a considerable amount of resources has been allocated to the primary school sector, in the form of curriculum materials such as textbooks, story books, audio and ICT materials. There is often a high frequency of NHA representations in early literary experiences (Burke & Copenhaver, 2004), and so, the age-range of this sample of participants was considered significant because it is the early stages and stepping stones towards the construction of ideologies.

Though a random sample of schools was used, the sample size was determined by the data collection method, which was qualitative interviews with the participant children. A total of 84 children were interviewed across the four Educational Zones. However, due to an unfortunate technical error on the audio recording device, the file for one set of interviews in Zone 4 was corrupted and lost before a backup could be saved. This results in a total of 79 participants for the group interviews with children. The sample size respected heterogeneity by taking into consideration the gender and culture of participants, and thus, constructed a purposive sample consisting of all children within that age-range, which was essentially all the children in Grade 1 within each primary school. This is broken down into the following:

- Zone 1: 11 children (2 group interviews)

- Zone 2: 34 children (6 group interviews)

- Zone 3: 17 children (3 group interviews)

- Zone 4: 17 children (4 group interviews)

### 3.3.3 *Purposive sampling of textbook writers and curriculum developers for accounts gathering*

A purposive sampling strategy was used for data collection from ten primary school textbook writers and curriculum developers, comprising men and women of different religions and ethnicities, all from the same participating institution. The participating institution was chosen as it is one of the principal local bodies involved in curriculum development matters for Mauritius. The participants, who were curriculum developers and textbook writers, were similarly purposively sampled for their unique position as direct and active contributors to the construction of the National Curriculum Framework Primary (MoE, 2015) and curriculum development practices, such as the languages teaching and learning syllabi and primary school textbook writing in Mauritius. This was a valuable sample in relation to sharing of experiences for the accounts gathering episodes, and in relation to the research aims and questions, so as to

gather data regarding the latter's NHA representations, and if such representations had potential impacts upon their textbook writing choices.

The underlying assumptions are that, first, the NHA representations of the curriculum developers and writers may be directly or indirectly replicated in their textual and pedagogical choices, and second, the religious and ethnic backgrounds, in terms of culture, has implications on the types of NHA representations and what they choose to foreground during the accounts gathering. The primary concern of purposive sampling "is to acquire in-depth information from those who are in the position to give it" (Cohen et al., 2007, p. 115), and these participants are essential stakeholders, by virtue of their professional roles. They provided opinions, information, and knowledge about NHA representations directly related to the primary education system and curriculum materials of Mauritius.

The purposive sample of curriculum developers and textbook writers empirically contributed towards the qualitative research style via the collection of data through accounts gathering. They were involved in the conceptualisation and production of the English, French, and Kreol Morisien textbooks; the choice to focus on these 3 language subject area textbooks and, thus, select the writers as the purposive sample participants is because the pre-reform English and French textbooks had the most significant degree of ideological issues regarding NHAs (Oozeerally & Hookoomsing, 2017). Heterogeneity was respected in the sampling, thus contributing to ensure that there was a diversity of genders, ages, areas of specialisation, years of experience, and cultures. The latter aspect of heterogeneity, in relation to diversity of cultures, was an essential consideration for the purposive sample with regard to the research objectives and, notably, Research Question 3 (What are the relationships between non-human animal representations in Mauritius and an understanding of the ecosystem across the data sets?).

### 3.3.4  *Purposive sampling of primary school trainee-teachers for questionnaire responses*

The research design had initially planned for a purposive sampling strategy of primary school trainee-teachers for gathering survey responses via a questionnaire (see Appendix C and Appendix D). This was submitted as part of the initial PhD proposal, and the data was collected from 98 trainee-teachers in July 2018. However, despite having collected the questionnaire data, the latter had not been used to form part of the study, and, as such, will not form part of subsequent discussions in this methodology chapter. When I had initially submitted the proposal along with the questionnaire, I had anticipated that a mixed method design would be appropriate to answer the research questions. It was during the later literature exploration (which enabled me to focus on the ecolinguistics paradigm) that I found that the research design would be more appropriate if aligned with a qualitative approach.

Additionally, the survey was administered to participants who were not sufficiently exposed to the language subject area textbooks and curriculum materials. These participants, therefore, did not have the necessary exposure to the language textbooks, and the NHA representations therein, which was a fundamental aspect of ascertaining their opinions and views regarding the relationship between representations of NHAs in CL, textbooks, and other media and children's learning about NHAs and the ecosystem. The 98 questionnaires have been securely stored, respecting the ethics of storing data, which is discussed in section 3.9.

## 3.4  DATA COLLECTION

The methods used, and the design of the data collection, correspond with the interpretivist approach of this study. The data collection methods and tools used are also the most pertinent in relation how representations of NHAs emerge from and have significance for the participants and their constructions of knowledge about the world they live in. In relation to the sampling

strategies and sizes outlined above, the three main sources of data collection are detailed in the following sub-sections.

The table below, representing the data collection for this doctoral research (see Table 4), presents a chronological overview of the multiple sets of data used to create the qualitative research design. The data collection phases spanned over four years, from 2016 to 2019, and provided data at different moments in times, which is particularly valuable to offer diverse perspectives from multiple data sets with variations in the time, form, space, and context (Le Moigne, 1999). This allowed me to gain insights into representations of NHAs not only from comparison of different sample participants and cases, but also in terms of possible patterns and emergent themes over time rather than at a fixed point in the historical-cultural context (Robillard, 2008).

**Table 4**

*Overview of data collection methods from 2016 to 2019*

| Data Collection method | When | Where | Sample Participants | Data collection tools |
|---|---|---|---|---|
| **Group Interview** | June to July 2016 | • 4 State primary schools across the four Educational Zones, Mauritius | - One school in each of the four Educational Zones; all first-year primary school children within these schools | - Semi – structured interview questions<br>- Use of pictures of NHAs (cartoon and lifelike)<br>- Audio-recorded data<br>- Field notes |

| | | | | |
|---|---|---|---|---|
| **Accounts gathering** | August 2017 | • Participating host organisation | - Primary school English, French, and Kreol Morisien textbook writers and curriculum developers | - Semi–structured interview questions geared towards the notion of 'accounts' <br> - Audio/video-recorded data <br> - Field notes |
| **Extended individual accounts gathering** | January 2018 | • Participating host organisation | - 1 Primary school textbook writers and curriculum developer who formed part of the accounts gathering in August 2017 and spontaneously requested to share additional experiences and information as an extension of accounts gathering | - Semi-structured interview questions to obtain deeper insights into the pedagogical choices of the writer with regard to NHA representations <br> - Field notes |
| **Text Analysis** | April 2018 to September 2019 | N/A | - Current (post 2014) Primary school language textbooks – Grades 1 to 2: English, French, and Kreol Morisien <br><br> - Children's literature (age-range approx. 5 to 6 years) – 3 books in each of the following languages: English, French, | - Coding tools adapted from Stibbe's (2015) 8-point framework for different forms of stories along with their linguistic manifestations. <br><br> - Observable patterns and manifestations in language |

| | | |
|---|---|---|
| and Kreol Morisien | | pointing to ideology. |

As the title of this thesis is '*From children's literature to curriculum materials'*, the research questions for the study have been organised by taking into consideration data related first to CL and then to textbooks, so as to build towards Research Question 3, regarding NHA representations in Mauritius and an understanding of the ecosystem, and Research Question 4, about the relationships between NHA representations in curriculum materials and culture in the Mauritian context. Accordingly, this methodology chapter is organised to present the data collection by starting with text analysis for the sample CL as Data Set 1, and primary school language textbooks as Data Set 2, then moving to discussions on children's group interviews as Data Set 3, and accounts gathering as Data Set 4.

The section below begins with methodological considerations regarding text analysis, as a qualitative data collection method, and provides an extensive discussion of eco-critical discourse analysis (ECDA). This is presented as the essential method for analysis in relation to an ecolinguistics paradigm and interpretivist approach adopted for this doctoral research; ECDA functions as the core fulcrum for exploring representations of NHAs across Data Sets 1 and 2, and also as the main guiding method complementing general thematic analysis for Data Sets 3 and 4. An ECDA framework adapted from Stibbe (2015) is explained in detail in order to show how data collected in the four data sets (particularly for text analysis) is discussed in the subsequent results and findings chapters. Following the presentation of the ECDA framework, group interviews, and accounts gathering, are explained as the two other data collection tools.

### 3.5 TEXT ANALYSIS: DATA SETS 1 AND 2

Text analysis as a data collection method has been used to establish two distinct data sets, though it should be noted that the interview transcripts from Data Set 3 are also included. More specifically, however, Data Set 1 comprises a random sample of nine children's books aimed for children between the age range of five to six years approximately. Three books have been sampled in English (ENG), French (FR), and Kreol Morisien (KM). They are:

1. *The Tale of Peter Rabbit* by Beatrix Potter [ENG]

2. *Horrible Bear* by Ame Dyckman [ENG]

3. *Greedy Zebra* by Mwenye Hadithi [ENG]

4. *3 Petits Lapins Gourmands* by Lucie Dermine [FR]

5. *Joyeux Noël* by Raphaël Thierry [FR]

6. *Le Loup Vengeur* by Editions Le Printemps [FR]

7. *Le Bogue* by Sedley Richard Assonne [KM + multilingual ENG and FR]

8. *Sinn Sinn* by Playgroup [KM]

9. *Zistwar Mustik* by Pushpa Lallah [KM]

Data Set 2 comprises all of the existing twelve primary school textbooks in English, French, and Kreol Morisien, for Grades 1 and 2. These Grades are considered as forming part of 'lower' primary, or early years education at primary level, and the textbooks are as follows:

1. English Grade 1 Part 1

2. English Grade 1 Part 2

3. French Grade 1 Part 1

4. French Grade 1 Part 2

5. Kreol Morisien Grade 1 Part 1

6. Kreol Morisien Grade 1 Part 2

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7. English Grade 2 Part 1

8. English Grade 2 Part 2

9. French Grade 2 Part 1

10. French Grade 2 Part 2

11. Kreol Morisien Grade 2 Part 1

12. Kreol Morisien Grade 2 Part 2

Text analysis is a fundamental part of this doctoral research, and text is considered as a form of discourse. The specific choice of stories and story extracts from English, French, and Kreol Morisien textbooks has been informed by previous research (Oozeerally & Hookoomsing, 2017), which suggested the prevalence of anthropocentrism and speciesism in language textbooks (and the short stories contained therein) as potential vehicles for the construction of NHA representations among children. These stories are not only visible in curriculum materials but are also present outside of the school context as they are commonly used at home; such texts are examples of how cultural values and ideologies may be transmitted to children. Children's literature plays a significant role in the construction of representations, as well as the construction of their own selves as social beings. The analysis from this data collection method, presented in the ensuing Chapters 4 to 7, was focused on Stibbe's (2015) eight-point framework (discussed in the previous chapter) using eco-critical discourse analysis (see Table 5 below) as it applies for both oral and written discourses.

### 3.5.1   *From discourse analysis to eco-critical discourse analysis*

The theoretical lens used for analysing the data was the ecological discourse typology; specifically, eco-critical discourse analysis was used as a qualitative coding technique. This section provides a brief overview of theoretical origins of discourse analysis, and the specificities of eco-critical discourse analysis as a method of processing the data for this thesis. Discourses can be perceived as sets of coherently organised linguistic material that enables

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people to socially construct meaning (Cohen et al., 2015). Stibbe's definition (2015) integrates multimodality as he mentions different ways in which groups used a standardised form of language to convey meaning, including images and music. The overarching posture of this doctoral research in relation to discourse analysis is that of eco-critical discourse analysis, aligned within the ecolinguistics paradigm.

There are distinctions between Critical Discourse Analysis (CDA) and Eco-Critical Discourse Analysis (ECDA); the former is articulated around criticism of discourse, such as the use of words and syntax as well as pragmatics of texts, whilst the latter also explores the language as a structural system and as a social product, which can favour dualistic perspectives and framing of the biosphere in ecological or unecological ways (Stibbe, 2015). Stibbe's 8-point framework is useful to approach ECDA from a dual socio-cultural and ecological point of view. To unearth patterns pertaining to language-as-a-system, as well as language as a socio-cultural product (Morin, 2007), I chose a combination of (1) a structural linguistics approach, studying the words, relationship between words and clauses, and morphemes, and (2) ethnomethodology, as discussed above in section 3.1.1. The structural linguistics approach is embedded within Stibbe's framework (2015) to reveal patterns of ideology; this was used predominantly, although not exclusively, for the analysis of CL, the textbooks, and the children's interviews. The latter also made use of a more general thematic analysis discussed in section 3.7. Ethnomethodology was adopted for conversational and accounts analysis among the textbook writers and curriculum developers; the data sets were then woven together using a rhizomatic approach (Deleuze & Guattari, 1987) and Stibbe's framework (2015), where the 'stories' run through the data sets.

The central concepts which have been borrowed from Stibbe (2015, p. 3) are that of "stories" (cognitive structures in the minds of individuals which influence how they perceive the world), and "stories-we-live-by" (stories in the minds of multiple individuals across a

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culture). These will be considered as the main (supra) categories for the text analysis. For the group interviews (Data Set 3) and accounts gathering (Data Set 4), questions were asked and left to see which categories emerged. Stibbe's (2015) ecolinguistic framework has been selected as a framework to use for data analysis and coding, as it aligns with the theoretical and methodological reasoning of this doctoral research and is grounded firmly within the ecolinguistic paradigm. Moreover, it caters for texts and discourse alike; the focus was on observable language patterns, or exceptions to the pattern, pertaining to the main points taken from Stibbe's classifications (2015).

## 3.6 ECOLINGUISTICS AND STIBBE'S FRAMEWORK AS METHOD OF ANALYSIS

Previously, section 3.2 of this methodology chapter expressed my reflections on ecolinguistics as a paradigm shift moving towards openness and interdisciplinarity, and away from mechanistic reductionism. It recognises a non-linear model of the human and ecolinguistic models of communication (especially in relation to research methods), new methodological considerations, and reforms the educational paradigm. In this part of the methodological considerations of the study, I draw mainly from the work of Stibbe (2015), which forms the crux of my conceptual and theoretical frameworks. Stibbe's (2015) eight-point framework provides a valuable instrument for understanding and analysing data in the context of this research, particularly for analysing CL and textbooks, even though I considered certain aspects for the analysis of accounts gathering and interviews with children. Whilst section 3.2 explored the ontic, epistemic methodological implications of the ecolinguistic paradigm, and how to use the knowledge and concepts to construct the empirical dimension of my research, this section now builds upon ECDA as an analytic method grounded in ecolinguistics and elaborates upon my choices to use this for data interpretation.

Stibbe (2015) provides an interesting perspective on the relationships between human and non-human species and explains how language plays a crucial part in articulating what he calls 'stories-we-live-by', and how they are manifested in language. This perspective is significant for my research as it provides valuable insights into the links between culture and anthropocentric-speciesist ideology as manifested in language. "Stories are cognitive structures in the minds of individuals which influence how they perceive the world" while "stories-we-live-by are stories in the minds of multiple individuals across a culture" (Stibbe, 2015, p. 6). The definition of stories therefore tallies with Morin's (2008) global definition of the cognitive machine corresponding to the collective capital as discussed in the literature review. While Stibbe (2015) states that cognitive models (stories) cannot be directly apprehended, certain clues can be obtained through the language people use.

Aside 'language', 'stories-we-live-by' are manifested through different forms and modes: writing, singing, drawing, taking photographs among others (Stibbe, 2015); this reveals that beyond identifiable stories, discourses also bear the characteristic of multimodality. This multimodal nature of discourse is particularly important in my context as it allows a form of methodological freedom whereby data can be gathered via various forms of discourse produced orally or in writing. Stibbe (2015, p. 3) stresses that "stories-we-live-by" have a direct influence on how individuals experience, live, and "enact" the world; they therefore have a form of determinism with the relationship(s) between humans and the environment, which is directly relevant to Research Question 3.

From the epistemological perspective, Stibbe (2015) also stresses the fact that the social sciences and humanities have known a radical shift, which is fundamental in my methodological reasoning. Implicitly stating Cartesian dualism, Stibbe explains how humanities and social science subjects have moved from a rational, reductionist, disjunctive perspective (Morin, 2008) to a more integrative if not conjunctive perspective. I adhered to

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what Stibbe (2015) calls 'stories' and 'stories-we-live-by' in order to observe fragments and clues in language production, including texts and discourse. He (Stibbe, 2015, p. 17) identifies eight different forms of stories along with their linguistic manifestations, which are summarised below in Table 5.

**Table 5**

*Summary of Stibbe's (2015) 'Stories we live by'*

| Form of story (cognitive, i.e. in people's minds) | | Manifestation (in language) |
|---|---|---|
| Ideology | A story how the world is and should be which is shared by members of a group | Discourses i.e. clusters of linguistic features characteristically used by the group |
| Framing | A story that uses a frame (a packet of knowledge about an area of life) to structure another area of life | Trigger words which bring a frame to mind |
| Metaphor (a type of framing) | A story that uses a frame to structure a distinct and clearly different area of life | Trigger words which bring a specific and distinct frame to mind |
| Evaluation | a story about whether an area of life is good or bad | Appraisal patterns, i.e. patterns of language which represent an area of life positively or negatively |
| Identity | A story about what it means to be a particular kind of person | Forms of language which define the characteristics of certain kinds of people |
| Conviction | A story about whether a particular description of the | Facticity patterns, i.e. patterns of linguistic features which represent descriptions |

| | | |
|---|---|---|
| | world is true, uncertain or false | of the world as true, uncertain or false |
| Erasure | A story that an area of life is unimportant or unworthy of consideration | Patterns of language which fail to represent a particular area of life at all, or which background or distort it |
| Salience | A story that an area of life is important and worthy of consideration | Patterns of language which give prominence to an area of life |

The eight 'stories' (see Table 5 above) from Stibbe's (2015) framework were identified as part of the coding and ECDA grids were used as analytical tools for the sample texts, though some stories were more appropriate to include in the grids than others. For example, erasure was not as pertinent for the ECDA grids as it relates to a story about 'erasing' a part of life; this would be somewhat opposite in the CL and textbooks which specifically contain NHA representations. Additionally, 'identity', in terms of labeling and subject positions were not apparent in the sample texts and so an adapted seven-point framework based on Stibbe's (2015) stories was used. In the following sections, I briefly present the stories in Stibbe's (2015) framework and their relevance to my work.

### 3.6.1 *Ideology and discourse*

One of the most significant story forms which has been consistently present in different forms of discourses, including CL and textbooks, is ideology. Ideology is a story about the way the world is, and should be, and is shared by members within a group (Stibbe, 2015). Ideology is manifested through different linguistic patterns (Stibbe, 2015):

- Vocabulary (e.g. connotations of words, pronoun use, modals such as 'might' or 'must')

- Relationships between words (e.g. synonymy, antonymy or hyponymy)

- Grammatical structures (e.g. active vs passive, nominalisation)

- Transitivity (the arrangement of processes and participants in a clause)

- Assumptions and presuppositions embedded in clauses

- Relationships between clauses (e.g. reason, consequence, purpose)

- How events are represented (e.g. abstractly or concretely)

- How participants are represented (e.g. as individuals or an aggregated mass)

- Intertextuality (patterns of borrowing from other texts)

- Genres (conventional formats of texts which serve a social function)

- Figures of speech (e.g. irony, metaphor, metonymy)

The abovementioned elements were integrated to my analytical framework. These were most relevant to the text analysis of data sets as representations of NHAs via linguistic devices were apparent in the organisation of textual material (including those used in primary textbooks).

### 3.6.2 Frames and framing

According to Stibbe (2015, p. 27), "a frame is a story about an area of life that is brought to mind by particular trigger words. Framing is the use of a story from one area of life (a frame) to structure how another area of life is conceptualised." A frame can therefore be considered as a cognitive organisation device, where a story is conceptualised in terms of another or other stories. This also makes framing relevant to ECDA as it is a common device, in various types of discourses, to present NHAs and their relationships to humans. A common example is the wolf being traditionally framed as a villain. As a cognitive organisational device, frames potentially have a significant impact on how children construct their NHA representations, thus making it an important analytical device for my research.

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### 3.6.3 Metaphors

Metaphors are a type of framing which often "set up reasoning patterns" (Stibbe, 2015, p. 66) through analogical reasoning. Like frames, metaphors can also be considered as cognitive organisational devices which have a potential impact on how children construct their NHA representations. Additionally, metaphors are more implicitly used in general language, through speciesist expressions, for example, by referring to someone as a monkey, or pig, or other NHA. Hence, metaphors are crucial in ECDA, notably in the analysis of ideological patterns like anthropocentrism and speciesism.

### 3.6.4 Evaluation and evaluation patterns

As stories that capture value attributions in regard to a given object, evaluation patterns represent important analytical devices; they allow the identification of elements pertaining to the three different types of discourses. An evaluation pattern is a linguistic pattern where "something is consistently described as positive or negative in texts" (Stibbe, 2015, p. 83). Hence, appraisals automatically capture elements pertaining to representations. Likewise, evaluations are "stories in people's minds about whether an area of life is good or bad" while appraisal patterns are "clusters of linguistic features which come together to represent an area of life as good or bad" (Stibbe, 2015, p. 84). The two concepts are not mutually exclusive as the analysis of appraisal patterns can point to underlying evaluations. Adjectives, such as good or bad, and metaphors including connotations, grammatical constructions, morphemes ('un', 'dis', 'in') are examples of appraising items (Martin & White, 2005). Both evaluations and evaluation patterns are common in discourses, both oral and written, around NHAs, and thus form a significant component to the ECDA and coding for this study.

### 3.6.5 The issue of identity

In culturally heterogenous contexts like Mauritius, identity represents an important story in discourse analysis. Highlighting the interplay between the noosphere and the sociosphere,

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identities are based on societal and cultural norms, with people often "forced or encouraged into taking on those identities" (Stibbe, 2015, p. 107). In reference to the human-NHA relationship nexus, cultural factors can have a direct impact on the construction of identities. For example, in certain Muslim families, children may be indirectly 'encouraged' to develop speciesist or negative attitudes towards pigs, from the extrapolation of cultural norms; this was observed in the accounts gathering data set and is discussed in Chapter 7.

The exploration of identities can be done through the examination of how discourses within a society create labels (subject positions) for different kinds of people and imbue them with certain characteristics, values or behaviours. This can also be relevant to the common divide between humans and NHAs. One example of a word cited by Stibbe (2015) is 'community', used to include all species. This is particularly interesting to this current research in relation to representations of NHAs in the cultural context of 'multiple communities' in Mauritius and the holistic philosophy present in local curricular at national level. However, from the analytical processes I used for textbooks and CL, I concluded that identity was a less relevant story for my study. The elements of labeling and subject positions were not apparent in my sample texts, and I opted to categorise the cultural elements that emerged in other stories, such as ideology. The framework I used was therefore a seven-point framework.

### 3.6.6   *Convictions and facticity patterns*

Convictions and facticity patterns form part of how general representations are constructed around particular areas, and this is relevant to NHAs as well, which makes it a valuable part of the coding for text analyses.  Stibbe (2015, p. 129) defines convictions and facticity patterns as "stories in people's minds about whether a particular description is true, certain, uncertain or false. Facticity patterns are clusters of linguistic devices which come together to represent descriptions as certain or true, or to undermine descriptions as uncertain or false." A variety of linguistic devices like modals ('must' and 'should', for example), quantifiers, calls to expert

authority and presuppositions, among others, can be used to convince people that certain statements are solidly true. This is applicable to CL and textbooks as well, where such devices can be easily identified by active, meaning-making children to construct their representations of NHAs. Convictions and facticity patterns are thus key in ECDA, especially in education settings.

### 3.6.7   Erasure

Expressed in different forms and degrees (Stibbe, 2015), the central idea of erasure is constructed around the representation that something is not important, or worth being considered. According to Stibbe (2015, p. 146) "An erasure pattern is a linguistic representation of an area of life as irrelevant, marginal or unimportant or through its systematic absence, backgrounding or distortion in texts." Erasure can be particularly pervasive in textbooks as NHAs, despite the possible will of curriculum-material writers, are not given enough attention in terms of how they appear in texts or are entirely absent from the materials. This connects with the relationship between representations and identities as constructing what is considered to be 'normal' for NHAs within a culture, and who belongs or who is excluded Hall (1997), as discussed in section 1.5 of Chapter 1. In this sense, it may be linked to cultural representations which lead to the erasure of certain NHAs from textbooks, such as the case of the tenrec in the Foundation Year Project materials outlined in section 1.4.1.

### 3.6.8   Re-minding and salience

Re-minding and salience are important stories in terms of how NHAs are represented and are linked to the concept of erasure. Both are significant to this study as they reveal representational patterns pertaining to the importance given to NHAs in different types of discourses, notably CL and textbooks. Re-minding implies a certain form of cognitive re-organisation in as much as it draws attention "to the erasure of an important area of life in a particular text or discourse and demanding that it be brought back into consideration" (Stibbe, 2015, p. 162). For example,

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the dodo bird, though extinct, is given salience in the Mauritian context as it is an image used on postcards, t-shirts, shopping bags, tea tins, and much more. Salience represents a story that an area of life is important and worthy. Salience can be expressed both linguistically and visually, which suggests that its representations extend to textual and illustrative materials, which are both key to CL and textbooks.

Backgrounding, passivation and impersonalisation are representative of low salience. Categorising pigs in terms of their utility, stripping them of all sense of individuality is one example (nursery pigs, grower pigs, market hogs, cull sows etc.). Passivation is also a form of euphemism and erasure whereby the human actor is erased from the process, for example, the removal of the actor in passivation forms such representations as 'chickens are killed for their flesh'. On the other hand, foregrounding is another way of giving salience. This can be achieved through activation. In contrast with passivation, where participants are represented as being at the receiving end of an activity, activation takes place when the social actors are presented as the active dynamic forces in an activity. Through activation, via transitivity structures, meaning the use of transitive verbs, the subjects in questions are foregrounded. Increasing salience through language can thus be helpful in resisting homogenisation. and this is exemplified further in Chapter 4 for Data Set 1. I argue, in the recommendations presented in Chapter 8, that high salience should be an intrinsic aspect of positive discourses around NHAs, and that this could feed forward to more integrated, ecologically-responsible discourse and activities for textbooks and other curriculum materials.

## 3.7   A SYNTHESIS OF ECO-CRITICAL DISCOURSE ANALYSIS (ECDA)

From the points discussed above, and as a result of my deliberate omission of identity as a story, I propose an adapted ECDA model based on Stibbe's (2015) framework. I have used this as part of my analysis of the text analysis, predominantly for the data sets of CL and textbooks,

but also as a consideration for group interviews and accounts gathering. A synthesised ECDA model is presented below in Figure 6 as a seven-point ECDA framework and the broad codes for analysis of the data sets.

**Figure 6**

*Synthesised ECDA model*

Vocabulary (Voc)

Relationships between words (Rw)

Grammatical structures (Gs)

Transitivity (T)

Assumptions and presuppositions embedded in clauses (A+P)

Relationships between clauses (Rc)

How events are represented (Er)

How participants are represented (Pr)

Figures of speech (Fs)

1.What values does the frame embody?

2.Is a response necessary?

3.Can the frame be challenged? If so, how?

4.Can (and should) a new frame be created?

Framing

Knowledge about x to structure y

Metaphor

Type of framing

Anthropocentrism

Speciesism

Ideology

How the world is or should be

Framework for text analysis

Unimportant/ unworthy of consideration

Erasure

The void: 'something important' is completely excluded from a text

The mask: it is erased but replaced by a distorted version of itself

The trace, where something is partially erased but still present

Good vs bad

Evaluation

Evaluation / appraisal patterns

Presentation of info

Conviction

Salience

Importance

In terms of facts (true, uncertain or false)

"modals such as 'must', 'should' and 'might' (description)

calls to expert authority and the authority of consensus

quantifiers such as 'some' or 'many', vs concrete evidence

hedges such as 'X thinks' or 'X believes',

presuppositions which construct descriptions as 'taken-for-granted'

Importance, worthy of consideration

Activation vs passivation: Foregrounding vs backgrounding; use of verbs and transitivity

Individualisation vs impersonalisation

Homogenisation (e.g. utilitaristic anthropocentrism

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## 3.8 GROUP INTERVIEWS WITH CHILDREN IN GRADE 1: DATA SET 3

Group interview was chosen as a data-gathering technique due to its versatility, flexibility, and its correspondence to the ontic and epistemic posture of this research. Group interviews allow participants to share their cultural knowledge and perspective, as well as give indications on how they construct meaning and comprehend the social world (Barker & Johnson, 1998; Morin, 2008). The aim was to collect data pertaining to Grade 1 children's representations of NHAs in relation to their cultural repertoires. The data obtained was analysed using a general thematic analysis approach and integrating elements from the 7-point ECDA framework (see Figure 6) presented above.

Thematic analysis is a flexible method that involves identifying themes or patterns of cultural meaning; it is used with qualitative data, usually textual, which is coded and classified according to themes (Guest et al., 2012). These themes are then interpreted by seeking commonalties and relationships that are relevant and useful to answering the research questions. A combination of an inductive and deductive approach has been used for the thematic analysis of the data in this study. The ECDA model enables a deductive approach for mapping onto the data, but as this is an explorative study, an overarching inductive approach to thematic analysis predominates, in terms of the themes having been derived from the content of the data in each data set. The inductive approach is appropriate for this study as it orients the exploration of representations of NHAs towards participant and data-based meaning in order to answer the research questions and propose a model for ecologically responsible discourse and activities in curriculum development practices and Mauritius curricula.

As interviews represent a 'social encounter', where the interviewer(s) and interviewee(s) co-construct the interview, three fundamental aspects of trust, curiosity, and naturalness (Woods, 1986, as cited in Cohen et al., 2007) were present in the interview process.

This is particularly important in the context of this study for both the accounts gathering with textbook writers, as well as group interviews interacting with children participants. Trust, built through a healthy rapport between the interviewer and the interviewees, is fundamental in creating a conducive atmosphere for sharing, exchange, and flow of communication. Through the use of colourful pictures, I attempted to draw from the natural curiosity of the children and stimulate their interest in the topic of the questions; this also helped in anchoring the interview process around a core focus topic. Naturalness helps to orient the researcher to be unobtrusive and the presence and actions of the researcher are minimised, as far as possible. One of the ways this can be achieved is through integration into the context; for example, using the pupils' first language was something I took into consideration for carrying out the group interviews.

### 3.8.1  *Formulation of children's interview questions*

In the context of this study, the interview questions gravitated around the representations that children have of NHAs in relation to NHAs they liked, disliked, reasons why, and if they had any experiences with NHAs in terms of pet-keeping, or via media such as books or films. As this research is qualitative in nature, and follows general principles of social constructionism and symbolic interactionism, embedded in the ecological paradigm, I opted for focused group interviews (Grawitz & Pinto, 2001) with groups of children for two reasons. In the first place, it allowed a sufficient degree of openness and freedom, allowing for the negotiation of the responses to re-orient the interview process as per my research objectives. In the second place, interviews with children necessitate a minimum level of focus and control during the interview process.

The questions aimed to elicit more representations of NHAs in terms of what the participants liked, disliked, and their reasons why, which were open-ended questions providing the opportunity for responses that could potentially include lived experience, observations of NHAs, interactions with NHAs in terms of pet keeping or other activities, and exposure to

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representations in films, cartoons, CL, and curriculum materials in schools. The choice of questions were informed by my readings on CL, ideology, and cultural identities (Poveda et al., 2009; Short, 2011; Stephens, 1992) and anthropomorphism in CL (Burke & Copenhaver, 2004; Dunn, 2011; Friedman, 2011; Krueger & Krueger, 2005; Serpell, 1999), which are discussed in sections 2.9.2 to 2.9.5 of the previous chapter. This was prepared as part of my initial ethics application before entering the field and the outlined questions were approved by the university ethics committee (see Appendix L). The sequencing was also determined prior to the execution of the interview. Ethically, group interviewing also limited the potentialities of intimidation compared to being interviewed individually with a researcher.

The interview questions and pictures of NHAs were piloted by a critical friend with a small group of three children, and modifications were made based on feedback from this piloting. My critical friend was someone who has an educational research background and experience in English language and literacy teaching for pre-primary and primary levels. The critical feedback received thus provided an important educational link and valuable insights for consideration. For example, I had originally planned to make use of a smiley-chart to record pupils' responses but after discussions with my critical friend, I decided not to make use of the chart because it had proven to be quite difficult to explain to children of this sample age-range during the piloting stage.

The experiences of my critical friend for the piloting were valuable to bring about some minor amendments to the formulation of some of the interview questions so that  they would be clearer and simpler for the children, and to use more colourful pictures showing clearer NHA faces. However, the questions were not informed by the ecolinguistic framework, which more concretely emerged following this data collection phase and this impacted on the research; the limitations of Data Set 3, the group interviews with children, and the formulation of the interview questions are further discussed  below in section 3.8.2.

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As far as design was concerned, the questions were constructed in a way to allow the participants sufficient freedom for expression in the first language, or languages with which they were most comfortable and confident. As per the recommendations of Arksey and Knight (1999), precautions were taken in the framing of the questions with respect to simplicity of vocabulary, avoiding ambiguous formulations and assumptions that the respondents have the required information.

### 3.8.2    *Procedures and protocols*

The interviews were carried out among young children aged between 5 to 6 years, who are distinctively different from adults or other age groups (Woodhead, 2006). The conception of the child for this study, as an active meaning-maker with agency, is discussed in section 2.8.2 of the literature review. Semi-structured group interviews were the chosen data gathering method. Questions were more general, in relation to participants' experiences with and representations of NHAs. The focus was not on specific accounts of their experiences, which is why I did not opt for accounts gathering (see section 3.9 for details).

To cater for the age of the children and bring diversity to the process, I included colourful images of NHAs and a drawing activity. As far as possible, precautions were taken to minimise difficulties associated with group interviewing children. Pictures were used to help in preventing distraction and children were encouraged to use their first language/s to reduce language anxiety in English. By using the language/s with which the children were most comfortable with, and by adapting my own discourse, including verbal (register, prosody) and non-verbal (eye contact, proxemics and kinesthetics), I attempted to decrease the potential of the children seeing me as an authority (see section 3 for discussion on methodology). The aim of adopting such processes was to elicit genuine responses and be prepared to address the Hawthorne effect (Roethlisberger & Dickson, 1939) or at least minimise it, but complete elimination is difficult to demonstrate precisely.

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The interviews were designed for a duration of approximately 20 minutes to retain the children's attention. Setting up the procedures followed the same pattern in the majority of interviews. The teachers were requested to call the children's names in small groups and they were brought, either by myself or the class teacher, to another classroom for the purpose of interviewing. However, in one participant school, arrangements had not been made for interviews to be conducted in another classroom. Therefore, these interviews took place in a section of the classroom with all other class pupils present, whilst the teacher conducted a lesson. This latter situation proved to be particularly difficult as the participating children were noticeably more distracted, and it was often difficult to hear their responses. Non-participating children would also voice their responses and opinions upon hearing the questions I asked the interview group. This created ethical issues in terms of recording responses for which there was no consent and I had to regularly note that these instances were to be excluded from the data analysis.

### 3.8.3   Limitations of group interviews with children in Grade 1

The interviews with Grade 1 pupils were the first set of data that was collected. This was done early on in the research because of the need to gain access to primary schools which required permission from the local Ministry of Education. Once permission was granted by the Ministry of Education, there was a short time frame in which the interviews had to be completed. Thus, the interviews were conducted during the literature exploration phase before the ideas from Stibbe (2015) had informed the ecolinguistics framework adopted for the study, and before the formation of the synthesised ECDA model (see Figure 6 above).

This is not to say that data was collected without any theoretical grounding to inform the methodological considerations of the research. Elements of the literature review and readings for the methodology had already focused on a general ecolinguistics approach before embarking on the data collection phase for carrying out the interviews. However, the eco-

critical discourse analysis component of this emerged later, which posed an issue with the questions being limited to children's representations of likes, dislikes, and reasons why (see section 3.8.1 above). Though children were asked about their lived experiences with NHAs, in terms of pets, observations, movies, books, and interactions with NHAs, the ECDA codes for thematic analysis are not directly mappable onto the content of the data for this data set. The results and discussions are therefore more general, with themes having emerged via a principally inductive method of thematic analysis.

In light of the key concepts and discussions that emerged, which focused ECDA based on Stibbe's (2015) framework, the conceptual and theoretical underpinnings of this thesis were refined after the children's interviews had taken place. Therefore, this represents one of the limitations of this study, in the sense that the questions for the semi-structured interviews with the children were not guided by Stibbe's (2015) work, which was the case for all subsequent data collection phases for the text analysis and accounts gathering. Due to this, the types of semi-structured questions with the children were somewhat limited to naming NHAs and discussing NHA preferences to elicit responses on the participants' representations. Though children were asked and encouraged to give reasons for why they liked or disliked the NHAs they named, the questioning approach did not elicit responses that were mappable onto Stibbe's framework (2015), other than ideology and framing, which were evident in all the interviews.

The children were also not used to being interviewed, as educational research with young children as active participants is not common in the Mauritian context. As such, they often did not provide any reasons for their choices as they were hesitant to speak. Participants did however share some of their personal experiences, such as pet keeping, representations mediated through stories from and interactions with adults and family members, and visits to nature parks or other wildlife exhibits where they had first-hand direct experiences with and observations of NHAs. However, because there was a limited time in which to carry out the

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interviews with each group of participants, there was insufficient opportunity to delve deeper into the children's '*expérienciation*' (Robillard, 2008) of NHAs, whether in their lived experiences, observations of NHAs or of adult behaviours towards NHAs, or interaction and learning from literature and films about NHAs/with NHA characters.

Such deeper questioning would have elicited richer data for interpretation regarding the relationship between culture and NHA representations in Mauritius, as well as the role of discourse (oral, textual, and visual) and potential didactic implications. This provides an interesting line of enquiry for future research. Though the ethical considerations of the research were essential in order to  seek informed consent from teachers, parents, and children, as well as carry out all the interviews within the designated period in which access to the schools was granted,  it reduced the length of time in which I was able to gather the data for this data set.

The interviews provided data limited to children's representations of NHAs in terms of reasons why they liked or disliked NHAs, but they presented opportunities for naturally emerging ideas, experiences, and stories that children spontaneously shared, resulting in a few responses with regard to children's experiences of NHA representations in books and films. This, in turn, provides the opportunity for future research in terms of using Stibbe's (2015) framework to guide the formulation of questions for another semi-structured interview with the children, who would now be in Grade 5, so as to gain additional insights.

In addition to this, when reflecting on the group interviews afterwards, and whilst interpreting the responses, it was noted that the way the questions were formulated also posed a limitation for the study in two ways. First, the questions regarding 'which animals do you like' and 'which animals do you dislike', and 'why', were intended to gather data regarding the children's representations of NHAs, and to elicit the children's *expérienciation* (Engel, 2007; Robillard, 2008) in terms of their lived experiences, ideas, and explanations for their

representations. However, upon later reflection, there is a slight possibility that these questions were somewhat ambiguous, in that children could have interpreted them as meaning which animals do you like/dislike to eat. Though this was not an issue raised when the questions were piloted (and therefore not something that I initially thought of), it is something that I sensed as a possible emerging limitation during the process of carrying out the group interviews. Although the occurrence of latter was of minimal possibility, given the general responses, this could have been the case for some of the participants as their responses for which NHAs they liked were those often considered as 'farm animals', such as chicken, sheep, and cows. There was also one child, out of all the interview groups, who responded as liking 'brown pig', which is locally known as *koson maron*, and while it is not an NHA that is often seen in the local landscape, it is culturally familiar as an ingredient for specific local cuisine.

Second, the questions were originally formulated in English for the ethics application and as a general guideline for the semi-structured interview. However, the actual interviews were carried out in Kreol Morisien as the language with which the participant children were most familiar, comfortable, and confident. Translation of those abovementioned questions from English into '*Ki bann zanimo to kontan/pa kontan'* may also have led to some ambiguity given the nuanced contextual differences between the two languages. For example, in Kreol Morisien, the questions 'which foods do you like/dislike?' have a similar syntactic formulation as '*ki bann manze to kontan/pa kontan?*'.

The interview questions, being semi-structured and flexible, also resulted in slightly differing group interviews with some groups having been asked more questions than others. Whilst the nature of semi-structured group interviews is that open-ended questions are asked to allow for discussions rather than a list of closed questions, the children interviewed were young participants who were not used to having open discussions with a researcher, but more familiar with question and answer scenarios that they would have normally experienced in class

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with their teachers. As some groups of children were more willing and excited to participate, not all of the pre-planned questions were posed to the children, as the conversation flowed more freely within the time permitted. On the other hand, participants in some of the groups were more timid and hesitant to speak with me; there was therefore more reliance on the questions to guide the group interview process and encourage the children to respond. Additionally, the choice of images could have been a potential limitation. While it helped children focus on the interview questions and understand the topics of the questions, it might also have influenced their responses, as the chosen images gave those selected NHAs higher salience than other NHAs which were not present as visual supports.

This section has provided the methodological considerations for the data collection of Data Set 3, the group interviews with children participants in Grade 1 of primary school in Mauritius. The limitations have been discussed, and these limitations, with regard to the formulation of the interview questions having been done before adopting an ecolinguistics paradigm and ECDA framework (Stibbe, 2015), have possibly impacted on the results and discussions for Data Set 3 in Chapter 6. The section below now explains the final data collection tool of accounts gathering with adult participants for Data Set 4.

## 3.9 ACCOUNTS GATHERING WITH LANGUAGE TEXTBOOK WRITERS AND CURRICULUM DEVELOPERS: DATA SET 4

The chosen data collection method of accounts gathering, from the textbook writers and curriculum developers, links to **ethogenics**.

> **Ethogenics** is at the intersection of social psychology and symbolic interactionism. It is a social scientific approach attempting to understand the means through which individuals build representations of their actions and

construct their identities within larger systems of knowledge and socio-cultural structures and rules. (Harré, 1983)

This is significant as ethogenics has conceptual similarities with the main ecolinguistic paradigm of this thesis. Such similarities add weight to the construct validity of accounts gathering as a research tool. As this research explores language and language use, that is, the manifestation of different forms of NHA representations, the ethogenics approach provides useful pathways for reflections that fit into the ontological and epistemological posture of the research as far as data gathering is concerned. An ethogenics approach to data collection assumes that the common-sense meaning of language and its social action occurs at a specific time and within a specific social and cultural context (Harré, 1983). Within the ethogenics approach, knowledge and traditions cyclically feed back into how individuals construct themselves. In turn, this feeds back into social cognition and forms the basis of the psychosphere, sociosphere, and noosphere (Morin, 2008).

The ethogenics approach is concerned with accounts and discourse analysis; both are significant for my research. Accounts are contextually bound in the sense that they are anchored in "social episodes" which are "coherent fragments of social life" (Cohen et al., 2015, p. 294). Episodes per se vary greatly in terms of temporality and focus. Through episodes, the researcher aims to investigate not only perceived behaviour but also people's thoughts, emotions, and intentions. For the purpose of this doctoral research, the context is taken from a dual perspective, that is the social and the educational, even though it can be argued that the educational forms part of the social. However, for the sake of clarity, this distinction will be maintained.

Accounts gathering is intrinsic to an ethogenics approach in terms of methodology and data collection. Accounts gathering was focused on English, French, and Kreol Morisien

textbook writers and language curriculum developers. In contrast to focus group discussions or interviews, which can be more 'generic' and are not necessarily defined or constrained within specific epistemic parameters, accounts gathering is explicitly situated within the ethogenics approach. Accounts gathering is a tool which aims to unearth systems of belief that potentially influence participants' actions and representations, within larger social and cultural systems. Participants are therefore expected to have a certain level of 'meta' reflection on their beliefs and actions, with enough reflexivity on a given matter of social and cultural significance. Hence, accounts gathering was found to be appropriate in the context of my research, to gather data from the adult participants, as the research objective was to elicit deep responses, anchored in social episodes and retrospective reflections.

Within accounts gathering, the notion of 'accounts' revolves around how individuals explain their behavioural patterns with others to make them justifiable and understandable (Cohen et al., 2015). Accounts gathering can be used to obtain accounts of past, present and future actions and experiences. The process of accounts gathering also provides the researcher with methodological flexibility as it takes different forms, such as personal records of experienced events, conversations with members of the society, and letters. Consequently, each participant was conceived as a self-monitoring agent with deliberate goals (Cohen et al., 2015).

In using accounts gathering as a tool within the ethogenics approach, I am using an approach which is different to previous empirical research in this area of study. Whilst there is previous research exploring anthropomorphic representations, specifically among children, the majority of data collection for such research has been set in artificial settings and laboratory set-ups (Ganea et al., 2014, and Friedman, 2011, in section 2.9.6 of the previous chapter), rather than using naturalistic approaches. Using accounts gathering tallies with the agency attributed to humans in the ecolinguistic paradigm as active 'experiencer' and shaper of the social landscape.

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Accounts were gathered from English, French, and Kreol Morisien textbook writers and language curriculum developers to gain deeper insights on their experiences as well as representational patterns towards NHAs. The ten participants were divided into small groups and the accounts gathering took place on the premises of the host institution. Due to the busy schedule and responsibilities of some of the participants, one session of accounts gathering was carried out in a pair, and one session individually, to accommodate the participants' convenience and request. Group and pair discussions were chosen as it would enable the participants to listen to each other and, if willing, share responses of whether they had similar or dissimilar experiences with NHAs. In addition, one participant who had given informed consent to participate in the group accounts gathering requested an extended accounts gathering episode to further share ideas, experiences, and reflections related to textbook writing and representations of NHAs. This resulted in five sessions with: (1) a group of 4, (2) a group of 3, (3) a pair, (4) and (5) two individual participants.

The 'metacognitive' aspect, in the form of reflections and justifications of the participants' behaviours, was also important as it allowed me to interpret their representations from a deeper perspective. For this reason, the specific approach to the data collection was informed by the principles of accounts gathering put forward by Brown and Sime (1981).

The social act was considered as the participants' involvement in language textbook writing and curriculum development and their representations of NHAs. All the participants had been extensively involved in textbook writing and curriculum activities at national level in Mauritius which gave them a unique position from which to provide accounts of their experiences and representations in relation to education, curriculum, and pedagogy. Open-ended questions were used to provide a semi-structured approach to the questioning procedures for each accounts gathering episode (see Appendix E).

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Taking a semi-structured approach to the questions provided flexibility in terms of allowing participants to generate the discussions regarding their representations, their thoughts on how their representations compared with those of other participants in the groups, and enabled the 'metacognitive' aspect to emerge more naturally. Accounts gathering was therefore a valuable method for data collection, from this sample of participants, to respond to the aims and research questions of this study. The section below proceeds by discussing the issues of validity and reliability in the context of this study and as they relate to the four data sets that have been discussed in the previous sections of this methodology chapter.

## 3.10 VALIDITY AND RELIABILITY

To provide a broader perspective on the issues of validity and reliability, I orient my discussion in this section towards two types of validity: internal validity and external validity. Even though threats to validity and reliability cannot be completely erased from any piece of research, they remain key factors to ensure that the research in question is effective (Cohen et al., 2015).

### 3.10.1 Internal validity

In both qualitative and quantitative research, internal validity aims to demonstrate that explanatory mechanisms relating to particular phenomena, events or data sets can be effectively supported by data (Cohen et al., 2015). Internal validity is mainly concerned with how the data is authentic, credible, dependable, and confirmable; one of the ways of ensuring such validity is through mechanical retrievable recording. In relation to this, the group interviews with children at school and accounts gathering with the textbook writers were recorded using an electronic audio recording device.

More generally, the chosen data collection techniques aligned with the construction of my methodological approach, in that they were deemed fit to generate verifiable data to tally with my research questions. In addition, attempts were also made to strengthen construct

validity, through trialling of the data collection tools, exploring similar constructs across various methods of data collection, and using Stibbe's (2015) eight-point framework as a guiding frame for engaging with eco-critical discourse analysis in the data coding of all data sets. Multiple languages were used in the data collection in terms of primary and secondary data; interviews, accounts, and texts were in English, French and Kreol Morisien. Different perspectives were also sought through the inclusion of different participant profiles, i.e. children, educators, textbook writers, and curriculum developers, thus partly addressing the issue of internal validity.

### 3.10.2 External validity

External validity pertains to the degree to which the results of research can be generalised. However, generalisability in itself is problematic for qualitative research, as the latter does not necessarily aim to produce generalisable results (Lincoln & Guba, 1985). Naturalistic and qualitative research are more concerned with comparability and translatability (Eisenhart & Howe, 1992; Lincoln & Guba, 1985), rather than generalisability. As this study is qualitative and exploratory by nature, it is important to provide adequate descriptions which may orient other researchers in determining how far the findings from this research in the Mauritian context could be translatable to another situation.  With respect to the history effects (Lincoln & Guba, 1985), precautions were taken to minimise situational artificiality; data were collected as unobtrusively as possible, while ensuring that the same type of fieldwork is replicable both in terms of temporality and spatiality.

This research called upon multiple methods for data collection and aimed to integrate both qualitative and some quantitative data (in terms of the textbooks) for the purpose of reliability, even though the core remains qualitative in nature. While interviews and accounts gathering catered for primarily qualitative data, text analysis, as secondary data, allowed the integration of both the qualitative and quantitative aspects, in terms of sampling all the English,

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French, and Kreol Morisien primary school textbooks for Grade 1 and Grade 2. Primary data were gathered via group interviews, accounts gathering, and an individual accounts gathering with one participant who wanted to extend the accounts gathering and continue sharing reflections, which extended from the accounts gathering.

Efforts were made to minimise the potential threats of the Hawthorne effect (Cohen et al., 2015). Also, as noted above, to increase the reliability of the data collection tools for the children's group interviews, the instruments were trialled, by a critical friend, with a small group of children within the age-range of the sample used in the research. Insights from trialling the instruments were then taken into consideration to modify and amend the tools accordingly so that they would be more reliable for the actual primary data collection; despite trialling the instruments however, the actual group interviews revealed limitations which were discussed in section 3.8.1.2.

Questions pertaining to ideologies associated with NHAs are universal, as similar types of constructs are present across human populations globally. Likewise, even though the results are contextually bound, they may not be limited exclusively to the local school contexts. Moreover, the research can be carried out in any educational context, within Mauritius itself and internationally.

## 3.11 ETHICS

This doctoral research took a variety of steps to abide by ethical principles and practices, in relation to the research aims and objectives, methodology, reporting and eventual dissemination of findings, in terms of doctoral submission and presentations. As this qualitative research design involves primary data collection, it is especially important to create balance between the research pursuit, in terms of seeking academic understanding and contribution to knowledge, and the fundamental rights and values of the participants (Cohen et al., 2015).

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Throughout the entirety of this research, I assumed an ethic of respect for my participants, the community of educational researchers, educational professionals, and policy makers. The research was informed by, and conforms to, the regulations of the British Education Research Association (BERA, 2018), the UK Data Protection Act (1998), the General Data Protection Regulation (GDPR; Regulation 2016/679) as a regulation in EU law on data protection and privacy in the European Union and the European Economic Area; and adheres to St Mary's University Ethical Guidelines.

Before engaging in any data collection methods, ethical approval was sought from St. Mary's University Ethics Sub-Committee, and ethical approval to conduct the research was granted on 2$^{nd}$ December 2015. As part of this process for ethical approval, letters were sent to the host organisation seeking permission to conduct the research on the premises, and to the Ministry of Education, Human Resources, Tertiary Education and Scientific Research (MoE) in Mauritius for access and permission to conduct research on the premises of the four participant primary schools.

Also included in the ethical approval letter from St Mary's University's Ethics Sub-Committee (see Appendix F), is the approval of my Participant Information Sheet, Participant Consent Form, Parental Consent Form, validated data collection instruments (see Appendices G to L), and my Certificate of Character (equivalent to DBS certificate in the UK). In Mauritius, the Certificate of Character is governed by the *Certificate of Character Act 2012 (No 18/2012).* It is an official document issued by the Office of the Director of Public Prosecutions, which states whether a person has previous convictions recorded against him/her; this was particularly important in the case of this study as it involved data collection with young children.

Informed consent was obtained through the use of a participant information sheet, and participant consent forms and parent consent forms (where needed), which provided written

documentation of freely given informed consent and voluntary participation in the research. Valuing the perspective and voice of the child was important in this research, which took ethical steps to acquire the informed and voluntary participation of the sample of children. In this sense, this research takes a stance that recognises the importance of participatory early childhood research, and recognises "children as active citizens with participation rights in all that affects them, including research (United Nations, 1989, as cited in Harcourt et al., 2011, p. 3).

Questionable practices, such as coercion and the provision of false information, were avoided (Robson, 1993), and respect was given to all participants' rights to freedom and self-determination. All participants were informed of the confidentiality of their data, their right to withdraw from the research at any time without question, and their right to reject the use of data-gathering devices such as video, cameras, and audio recording, including Android and other electronic devices. Audio recording was rejected by one participant who had given informed consent for the accounts gathering, and requested an extended accounts gathering episode. I relied solely on field notes and checked these notes as well as the verbatim responses with the participant following the additional data collection.

For all instances of group interviews and accounts gathering episodes, participants were seated around a big table for discussion. For the group interviews with children, I sat down on a small chair at the same level with them. The participants were informed about the reason of my presence, and the purpose of the interview was explained; this explanation was given in Kreol Morisien, the first language of the participant children, as it would be easier for them to understand. All participants were informed that they would be audio-recorded, and were instructed to speak one at a time, as far as possible, as this would later facilitate transcribing.

Additionally, I member checked the accounts gathering episodes with the adult participants and shared initial findings with them so that they were given the opportunity to clarify their statements or agree that these were statements that they had said. This member checking was also carried out for the extended accounts gathering episode in section 5.11 of Chapter 5. In relation to ethical accountability, I shared the on-going research at local academic research conferences and seminars, presented at the St Mary's University Post-Graduate Research Week (PGRW) in 2015, and discussed with critical friends in Mauritius who provided me with feedback as I conducted the research.

## 3.12 CHAPTER CONCLUSION

This methodology chapter has outlined the key choices and methodological considerations of this study, elaborating on the rationale and structure for the methodology and methods adopted, as well as the limitations, issues of reliability, validity, and ethics. It has discussed the ontological and epistemological posture of this research, which is grounded in socio-constructionism and the interpretivist paradigm. The chapter put forward the ecolinguistics perspective as a paradigmatic set of theoretical and methodological principles central for my reflections. An adapted version of Stibbe's framework (2015) was presented as a seven-point ECDA model, and as the anchor point to explicitly articulate the theoretical discussions in relation to the methodological dimension of the research. The following chapters 4 to 7 present the findings and discussions of the research for the four data sets presented here. Specifically, the next chapter presents the results and discussions for Data Set 1: Children's Literature.

# CHAPTER FOUR – FINDINGS AND DISCUSSIONS

## Data Set 1: Children's Literature

## 4    INTRODUCTION AND OVERVIEW

This research explored the relationships between non-human animal (NHA) representations, children's literature, and primary-school level curriculum materials. This was done via discourse and document analysis using eco-critical discourse analysis (ECDA) informed by an ecolinguistic perspective, so as to understand representations of NHAs in the Mauritian primary school educational setting. The thesis reflected on, and proposes, a model of curriculum material writing and development that integrates more ecologically responsible discourse and representations and an understanding of NHAs from an ecolinguistic lens. The model proposed moves towards reconceptualising ecologically responsible holistic education more generally, within the holistic philosophy present in the primary curriculum of Mauritius.

## 4.1    Organisation of data sets 1 to 4

Chapter 4 and the subsequent chapters 5, 6, and 7 present the findings of the research through my interpretation of the data. The four data sets (see Table 3 in the previous chapter) are analysed thematically as well as using an eco-critical discourse analytical approach adapted from the work of Stibbe (2015), which forms an integral part of the methodology and methods for analysis. As discussed in section 3.4 of the Methodology, the research questions have been organised by taking into consideration data related to CL and textbooks so as to build towards Research Question 3 (regarding NHA representations in Mauritius and an understanding of the ecosystem), and Research Question 4 (about the relationships between NHA representations in curriculum materials and culture in the Mauritian context).

Data Set 1 in this present chapter discusses CL from the perspective of children's books as materials that teachers, trainee-teachers, textbook writers, parents, and other stakeholders in primary education, have conscious volition to freely decide whether or not to use. In this freedom of choice, they can reflect on the ecological discourse they want children to be exposed to, how CL can contribute to children's learning about the biosphere, and how it can be a medium to encourage or discourage ecologically responsible attitudes and behaviours. This is contrasted with Data Set 2, language textbooks and curriculum materials, which are provided to primary schools and therefore represent prescribed resources that restrict teachers' volition, at least partly, in terms of didactic choices. Overall, the four data sets are organised and presented as follows:

**Data Set 1**

- Text analysis – Children's literature **[present chapter]**
- Main findings (ECDA/thematic + RQ1 and RQ3)

**Data Set 2**

- Text analysis – Grades 1 and 2 primary school language textbooks **[Chapter 5]**
- Main findings (ECDA/thematic + RQ2, RQ3, and RQ4)

**Data Set 3**

- Children's interviews with Grade 1 pupils **[Chapter 6]**
- Main findings (ECDA/thematic + RQ3 and RQ4)

**Data Set 4**

- Accounts Gathering with primary school textbook writers and curriculum developers **[Chapter 7]**
- Main findings (ECDA/thematic + RQ3 and RQ4)

### 4.1.1 Towards a rhizomatic presentation of data

I organised the data sets according to the research questions with respect to how each data set allowed me to address each question. However, there are overlaps, as the research questions (RQs) as well as the data sets link together from a more macroscopic perspective, as presented in Figure 7. This motivated my choice to use a rhizomic (Deleuze & Guattari, 1980) approach to presenting my analysis.

Rhizomatic modelling allows the researcher to present and interpret data in a non-centralised, non-hierarchical way which does not rely on specific entry and exit points. Deleuze and Guattari (1980) compare rhizomatic analysis to arborescent, tree-like modelling, concomitantly criticising dualist and linear forms of representation. This is useful on two fronts. First, the general argument of this thesis is based on a fundamentally non-dualistic philosophy. Secondly, the intricacies of the data sets, with the multiple levels of connection, make linear hierarchical presentations problematic. In this sense, each node, whether it is the research question or the data set, is neither the starting point, nor the end point of data representation. To enable me to see the connections more clearly and establish the rhizomatic approach adopted for the presentation of the data, I have chosen to represent my data interpretation trajectory diagrammatically. The codes for the data sets and research questions are presented below.

The codes for the four Data Sets are:

1. Text Analysis Children's Literature: [TA-CL]

2. Text Analysis Curriculum Material: [TA-CM]

3. Interviews with children: [CH_I]

4. Accounts Gathering: [AC_G]

The codes for the Research Questions are:

1. Research Question 1: [RQ1_Rep_NHA_CL]

2. Research Question 2: [RQ2_Rep_NHA_CM]

3. Research Question 3: [RQ3_Rel_ NHA-BIOs]

4. Research Question 4: [RQ4_Rel_NHA-CM-Cult]

5. Research Question 5: [RQ5_Mod_Cur_NHA-ERE]

Figure 7 provides a rhizomatic representation of the data interpretation, showing the interconnected links between the research questions. The model also shows that Research Question 5 symbolises the condensation of the reflections for this study.

**Figure 7**

*Rhizomatic representation of data codes and data interpretation*
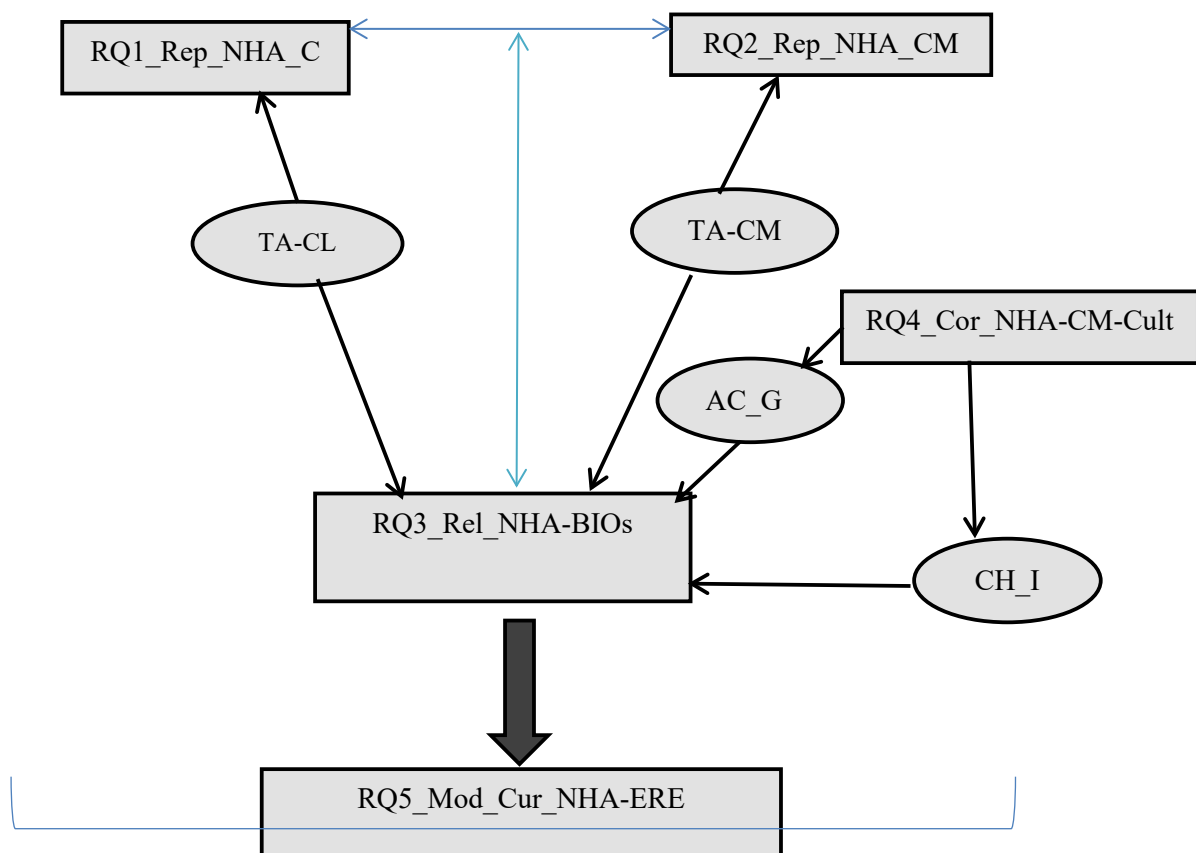
The model above (Figure 7) represents a basic diagrammatic translation of my projected rhizomatic approach to the interpretation of the data. As per the modalities of rhizomatic modelling, each node can be taken as the point of reference; there is no hierarchical structure in how the data will be interpreted in terms of priority or perceived importance, and all the research questions are linked. Research Question 5 thus functions as a culmination point of reflections and analysis, founded upon the first four research questions, and this is in relation to one of the research objectives to interpret the emerging findings so as to propose a contextualised ecologically-responsible curriculum model.

Research Questions 1 to 3 are directly linked, and responses to the first two questions lead to deeper understanding of the response to the third question. Hence, relationships between representations of NHAs in Mauritius and understanding the biosphere (RQ3) can be at least partially extracted from the link shared between RQ1 and RQ2, which automatically establishes a link between these three research questions. The application of the adapted ECDA framework (Stibbe, 2015) generated data which can be interpreted for both RQs 1 and 3. The TA-CL data set (Data Set 1) corresponds to RQs 1 and 3, as elements taken from textual analysis of CL map onto the representations of NHAs in CL, as well as the relationship between representations of NHAs in Mauritius and understanding the biosphere. The TA-CM data set (Data Set 2) has the same correspondences as textual analysis from textbooks and curriculum materials generated data for both the representations of NHA in CM (RQ2), and the relationship between representations of NHAs in Mauritius and the biosphere (RQ3). In addition, the Data Set 2 also links directly with RQ4, as representations of NHAs in the primary school textbooks will feed forward to understanding the relationships between NHA representations in curriculum materials and culture in Mauritius. Curriculum materials are used as the macro-category that includes textbooks and other resources.

Data Set 3 for children interviews (CH_I) and Data Set 4 for accounts gathering (AC_G) correspond to RQs 3 and 4 since they generated data which are culturally bound and directly deal with responses and data from human participants, thus shifting the primary sources of data from document analysis to human respondents. The data sets also linked with the curricular aspect as all respondents have a direct relationship with the local primary school curriculum, as they are either school children, at the receiving end, or curriculum developers and textbook writers, at the producing end. Therefore, the data generated from these participants points towards relationships between culture and curriculum, and they feed forward to answering RQs 3 and 4.

Though the organisation of my interpretation of the data sets is rhizomatic and has no hierarchical starting or ending point, for pragmatic reasons, there remains a linearity in how they are presented in the findings and discussion chapters 4 to 7. I also anticipate emergent links between research questions and data sets, which are discussed in an 'Emergent Findings' sub-section of data sets, where relevant. The remainder of this chapter now focuses on presenting the findings and discussion for Data Set 1 – Children's Literature. The random sample of nine children's books are presented, starting with those in English (ENG), then moving to French (FR), and then to Kreol Morisien (KM). The analysis and discussion for each book is presented under thematic subheadings for each story, preceded by a brief descriptive introduction to the story and the appendix reference. The initial coding grids for the analysis of the stories can be referred to in Appendices M, N and O for the three languages. In terms of linguistic analysis, the linguistic patterns through which ideology is manifested are included in those aforementioned coding grids; they are noted in abbreviations based on Stibbe's (2015) list as presented in Figure 6 in Chapter 3.

## 4.2 FINDINGS AND DISCUSSION OF CL 1: *HORRIBLE BEAR*

*Horrible Bear* is written in English; it presents the story of a little girl who blames a bear for breaking her kite and how the bear intends to tell her off for calling him 'horrible'. The images for the pages referenced in this section can be referred to in Appendix P.

### 4.2.1 A paradoxical form of salience

While salience, as a concept, appears to be adapted to the depiction of 'live' NHAs, in real-world contexts (Stibbe, 2015), it would seem that it can be semantically nuanced when it comes to anthropomorphic NHA characters. The case of *Horrible Bear* is interesting in this sense. It could be argued that presenting NHAs as characters is in itself a form of salience, as it corresponds, for example, to the idea of individuation. It is true that *Horrible Bear* does not have a name. However, the individuation aspect is clear, notably with the presence of strong anthropomorphic traits, like bipedalism, the wearing of clothes and shoes and having clear facial expressions. On the cover page (see Appendix P), for instance, the presence of activation, through the fact that the bear is holding a bouquet, complements individuation. In the CL sample, clothing as a form of anthropomorphism is a theme that also runs in *Greedy Zebra* and *The Tale of Peter Rabbit*.

None of the anthropomorphic characters in the KM children's books wear clothes, and for French, only one of the three books features NHA characters wearing clothes; if the range of books had been broader then this may not be a significant observation. The same pattern can be observed with the unnamed goat and squirrel in *Horrible Bear* (see Appendix P). The heavily anthropomorphic goat is depicted as wearing glasses, a hat, jacket with bowtie and sitting on a chequered mat having a picnic with a squirrel in a dress. Likewise, on pages 11 and 12 of the book, the bat which is seen hanging upside down is anthropomorphic, wearing black

clothing and a white cap, imitating the girl saying 'Horrible bear' so the bear can practise being angry.

The anthropomorphic dimension is extended to the bear's 'home'. His cave features coats, hats, and books on display (see Appendix P), which also means that the bear is capable of reading. Therefore, there is a conceptual paradox in relation to salience. How far is it possible to conceptualise 'salience' when the characters are given anthropomorphic traits? Humans are considered intrinsically salient, as discussed in Chapter 2, and NHAs are *given* salience in terms of how they are represented *by* humans; anthropomorphising NHAs by representing them as metaphorical or symbolic humans results in a conceptual paradox. The higher the degree of anthropomorphism (as metaphorical or symbolic humans), the lower the degree of salience as NHAs. At the same time, however, 'ontological salience' increases as a function of the attribution of human traits to the NHA character as the process of characterisation implies foregrounding, which is one of the criteria to evaluate the degree of salience (Stibbe, 2015).

### 4.2.2   *Dualistic presentation of characters*

The depiction of the two main characters of the story appears dualistic. There is an opposition between the bear, who has a mild expression and is smiling, and a human female child who is pointing a finger at the former, looking angry. The text is complementary to the human child's facial expression, while at the same time being contradictory to the bear's visual description. Indeed, "Horrible bear" is incompatible with the expression of the bear, as well as with the fact that he is holding a bouquet. The difference is also apparent in the size of the two characters, with the girl being significantly smaller. The cover therefore establishes a clear, disjunctive demarcation between the bear and the girl, which is again reminiscent of the dualist posture separating human and NHAs. Despite a high level of anthropomorphism, the ontological opposition is maintained; in this example, it is mainly in the visual aspect.

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### 4.2.3   Normalisation of NHA mistreatment

An interesting aspect with respect to how events are represented in the visual aspect concerns a form of mistreatment of NHAs (albeit anthropocentric) in the book. On pages 3-4, the girl is standing on the bear's stomach, pointing a finger at him, as he is lying down. The action of standing on a bear's stomach is normalised, as is the case with stomping directly over the squirrel on pages 4-5, who is lying in front of her, with hands on its head in a protective position. This can, to some extent, be considered as an extension of the dualistic presentation of characters, highlighting a form of hierarchy in terms of power relationships. In other words, despite strong anthropomorphic traits attributed to NHA characters, the human remains the holder of power and dominates NHAs.

Following this type of presentation, another aspect which can be seen is the delocalisation of responsibility when it comes to negative actions. On pages 15-16, in the visual aspects, there are multiple 'scenes' to show a sequence of events: the girl draws a bear with crayons and scratches it out, kicks the book, ripping the ear off her soft toy rabbit. The book is 'Goldilocks and the three bears'. The text "HORRIBLE BEAR!" and "HORRIBLE BEARS!" is a form of generalisation from the human character's experience of one bear being extrapolated to an experience of all bears, with a plural 's', as horrible; the visual reference to 'Goldilocks and the Three Bears' added a layer of complementarity, filling in a narrative gap with regard to 'reading' and  reading materials. Though no reference is made to Goldilocks in the text, the reader infers that the girl's generalisation process may be at least be partially based on her reading materials which are depicted in the illustration of her room.

The generalisation process implying the transposition of the characteristics associated with 'horrible bear' to the 'bears' also links to the homogenisation of bears as a species. Coming back to the delocalisation of responsibility, it is worth noting that the subsequent actions following the anger of the girl, i.e. breaking off the ear of her toy rabbit, are blamed on

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the bear ("He broke my…"). However, it is also important to note that this event marks a narrative turn, where the girl's anger starts to subside; on page 17 of the book, she no longer blames the bear and accepts her responsibility by saying "I didn't mean to".

### 4.2.4 Euphemism and speciesist expression

In the inner front cover of the book, the phrase "…even the occasional horrible bear in your family…" represents a euphemised speciesist expression. In terms of linguistic analysis from the lens of ideology as story (Stibbe, 2015), the elements of 'relationship between words' (Rw), 'participant representation' (Pr) and 'assumption and presupposition' (A+P) are foregrounded. It implies that families usually have a "horrible bear", which is a euphemism in the sense that it normalises the adjunction between the adjective "horrible" and the noun "bear". This normalises the idea of a horrible bear; it is a form of, what I would refer to as, reverse transposition where 'horrible bears' are taken as a fact and considered metaphorically present in human groups making the interpretation of the expression 'horrible bear' less negatively impactful. The visual dimension is complementary to the speech bubble text as it shows the angry girl reprimanding the bear who has a facial impression showing non-intentionality in terms of mischief. Here, it can be argued that the text and illustration in the flap contribute to downplay the semantics of the expression into 'mischievous and unintentionally naughty being'. This is substantiated on pages 1-2 of the book as the illustration adds details to the text in the sense that the bear was sleeping and accidentally rolled on the girl's kite, breaking it, thereby reinforcing the notion of unintentionality and 'accidental mischief'.

### 4.2.5 Practising anthropomorphism

An interesting element of this story concerns the section where the bear has to 'practise' anthropocentrism. In other terms, on pages 19-20, the bear is mimicking how the girl stomped on pages 5-6. While he is no longer speaking and only roaring, the fact that he is having to practise the human expressions of anger as demonstrated by the girl implies that he is not

naturally inclined towards such behaviour. He is seen walking and being obnoxious, putting a foot in the goat's picnic basket, throwing the goat's flowers and causing the squirrel's cup to fly off. On pages 21-22 of the book, he gets tangled in the people's clothesline, thus pulling down all the clothes they had hung to dry outside.

### 4.2.6   *The transformation of horrible bear to sweet bear*

After the narrative turn mentioned above, where the girl's anger subsides, 'Horrible Bear' spontaneously transforms into 'Sweet Bear' as a result of the former's apology. The girl realised that she was behaving badly and being 'horrible' and therefore apologised to the bear who had not done anything wrong. The illustration is symmetrical to the text, the apology from the girl having made "all the horrible go out of the bear" (p. 23).  In this turn of events, the transformation was triggered by the reversal of the girl's emotional state. At the same time, a form of 'reverse anthropocentrism' can be observed, with the inference that the girl needed to behave more like the bear and also have a 'Sweet Bear' idea.

### 4.2.7   *CL 1 summary and the ideology-didacticism relationship*

*Horrible Bear* provides interesting insights into how cultural didacticism, ideology and power relationships are intermeshed with the narrative, and demonstrates that anthropomorphism is not necessarily a means to erase anthropocentric ideology from the presentation of NHA characters. The didacticism is mostly passive in this story. It shows the reader that it is not fair to be angry for no reason, and that an apology can go a long way in making the other feel better. In this sense, there is an advocacy towards empathy, and the importance of being kind. It also shows that an individual can be mean during spells of anger. The axiological dimension is therefore articulated around being kind and apologising when one is at fault. However, the story continues to perpetuate different levels of dualism implicitly, starting from what was observed in the cover page and the first part of the story. This is reinforced by how the girl was behaving towards the bear and the squirrel, normalising misbehaviour towards NHAs while

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simultaneously representing the vertical power relationships between the human and the NHAs.

## 4.3 FINDINGS AND DISCUSSION OF CL 2: *GREEDY ZEBRA*

Greedy Zebra tells a story of how the world came to be and provides NHA representations that are intended to directly contribute to children's active meaning-making in how they construct knowledge about the biosphere and the existence of NHAs. It is a story of zebra that is represented as eating too much and therefore not having a lot of choice about the 'clothes' that it will wear as its new skin. The images for the pages referenced in this section can be referred to in Appendix Q.

### 4.3.1 *Transmediation and transmediative trajectories*

The potential importance of **transmediation** is visible and noted as from the cover page, in terms of the title (text) into the illustration (artwork).

> **Transmediation** can be defined as the process of moving a work from one medium into another, via sensory or semiotic translation of the medium (McLuhan, 1994), and thus involves the construction of representations from different types of media.

The already strong statement given by the title, i.e. the anteposition of a pejorative adjective to the noun 'zebra', combined by the proper noun value of the group with the absence of a determiner and capitalisation of both Greedy and Zebra, is compounded by clear symmetrical illustrative choices that reinforce what can be decoded from the title itself. The zebra is presented as a chubby, fat being with bananas hanging from its mouth. Building on the premise that the child is an active meaning-maker, as well as a critical reader, his/her transmediative trajectory can be constructed from the pejorative framing of the zebra, which is reinforced by the dual modes (textual and pictorial) of information presentation. The child's

potential transmediative trajectory is therefore skewed towards a negative representation of the NHA depicted. Through this a first layer of passive cultural didacticism can be identified in the link between 'greedy' and the resultant fact of being fat. Additional instances of transmediation such as this, which could potentially influence children's active meaning-making of NHA representations are noted below.

Pages 1 to 2 of the book show that NHAs, prior to the intervention of a miraculous/metaphysical, anthropomorphically-grounded event (i.e. the discovery of 'clothes') were depicted as being depressing and dull. This can also be linked to the fact that they seemed "soulless", which reminds the reader of the Cartesian dualistic perspective according to which the soul is a 'property' of the human being only. The facelessness of some NHAs, along with the dark eyes of some of the others, reinforce the homogenisation in the statement "all animals were…" (see Appendix Q).

Pages 3 to 4 show dark and relatively pejorative traits associated with the zebra, as well as "all other animals" contrasted with the jaguar, who was the bravest. Etymologically, the term 'brave', as an adjective, has Latin roots meaning bold, splendid, and valiant; it is also linked with the Occitan word 'brau', meaning kind, helpful, accommodating and obliging, and is more often used to qualify human beings who are gentle and of service. In this sense, it can be argued that the 'braveness' of the jaguar is anthropomorphic in nature. The leopard, a NHA of the same family, is later shown to also have anthropomorphic traits in terms of having the capacity to sew and the character of being 'meticulous'. In the visual representations, the jaguar is shown as displaying brighter colours, and all the other NHAs still retain the dullness and darkness. It appears, therefore, that there is a layer of hierarchical representation between the different species in the story, those having anthropomorphic characteristics being 'better' than the others.

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In pages 9 to 10, the expression "stuffing (Voc) far too much (Rw+Pr) grass into his bulging mouth (Rw+Pr)" also marks the beginning of a '*champ sémantique'* (a French term broadly meaning semantic field) of greed and 'fatness' around the zebra, where words such as 'stuff, far too much, and bulging' are often used to represent this NHA. Beyond potentially contributing to the semantic construction of the readers' representations of the zebra, this *champ sémantique* also simultaneously underlines a passive didactic streak around the linguistic-semantic associations with the concept of greed. This is contrasted by constitution of another set of *champ sémantiques*, among other species and NHAs who display anthropomorphic traits like wisdom for the elephant and eagle, and attention for details in the leopard, or even braveness for the jaguar. This semantic organisation can be didactically and axiologically meaningful, especially in relation to the potential impact on children's learning, as the representations are value laden and are direct vectors of referential, representational and ideological information.

The final instance of transmediation in pages 11 to 12 shows the character of the elephant withholding knowledge from the eagle. This is also linked to the general understanding in the collective consciousness that elephants are known to have excellent memory. This is an instance of transposition of noospheric/cultural knowledge to a NHA character who then goes on to displays traits of arrogance and is described as "coughing pompously". This is compounded by the verticality of the pictorial representation, which shows the elephant standing in a higher position than the rest of the NHAs.

### 4.3.2   Didacticism

The didactic aspect of this story is implicit but strongly foregrounded. The semantic dimension associated with the use and creation of a *champ sémantique*, notably through the constitution of a stock of lexical items, appear to be arranged around definite categories, as mentioned in section 4.3.1. For the zebra, there is a systematic reinforcement of the *champ sémantique* of

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greed, which is further associated with being fat. On page 12 of the book, for example, "fat little legs", composed of the anteposition of the double adjectival locution to legs, reinforce the greedy nature of the zebra. The formative aspect of this tendency, albeit passive, allows the learner/reader to build a specific vocabulary around the central lexical item of 'greed'. The same pattern is noted further on pages 23-24 with "blades of grass bulging from his mouth", and "at the risk of indigestion", indicating clear connotative markers of size, appetite, and excessive eating leading to indigestion, through the relationship between the clauses (Rc). This also leads to the creation of causality patterns, i.e. eating too much will lead to indigestion.

Further instances later on in the text, such as pages 25-26 in the book, contribute to the solidification of the *champ sémantique*, establishing additional causality links pertaining to fatness and clothing ("Being such a very fat zebra", "tight fit", "nearly bursting at the seams around his fat tummy"). The zebra is described as struggling and barely able to fit in the coat due to the weight and shape of his body. These traits are contrasted with more positive ones associated with other NHAs. However, the positive *champ semantique* also appears to be organised around varying levels of anthropocentrism, for example, wisdom attributed to the elephant, dexterity and meticulousness attributed to the leopards, and even glamour, which is an emerging positive trait of the antelope.

The fur of NHAs is presented as being a separate item akin to clothing of humans, and it is only after wearing such clothing items that NHAs are 'de-dulled' and 'de-depressed'. They gain positive intrinsic value only after mimicking the clothing habits of humans. Likewise, constitutive parts of the NHA bodies are turned into accessories, such as the horns of the antelopes. The framing of fur and horns as clothes and accessories underlines two aspects. First, there is an underlying dualism transposed to the NHA world in terms of dull-depressive-naked versus glamourous-lively-clothed. Secondly, the 'wearing' fur brings a sense of validity and pride to the NHAs, which is reinforced by the verticality presented in the visual aspect. The

antelope, for example, is represented as standing with pride, with an anthropomorphic facial expression that further reinforces this state of mind. This presentation around clothing also relates to human social organisation, where clothing and accessories are not only a symbol of identity affirmation in indigenous cultures, for example, but also a clear marker of social stratification, where the rich tend to wear expensive clothing made of noble material. This clothing habit is particularly prominent in capitalist societies. It is therefore safe to say that there is another layer of passive cultural didacticism, where the learner is being 'taught' the symbolic value of clothing, as a means to gain validity, pride and joy.

The value of clothing is further reinforced in the subsequent pages of the story, thus clearly establishing the demarcation between the clothed (anthropomorphic positive trait) and the naked (dull, depressive). Clothing has the merit of embellishing NHAs, as evidenced in pages 19-20 which present the "most splendid fur coat" sewn by leopard. This instance is particularly interesting as it is possible to discern a form of euphemisation of the fur coat. In other words, the fur coat, which happens to be 'splendid', is not presented as a part of the NHA obtained by killing and skinning. Instead, it is presented as a clothing item, sewn by the leopard herself. This process 'lightens' the semantic, cultural and anthropocentric associations with the concept of a fur coat, as a general clothing item which is also worn by humans, especially those who are in the higher social strata. In the visual aspect, leopards are depicted as meticulously sewing their fur on using their paws and mouths. In contrast, the zebra still has grass in his mouth and is watching the leopards, who appear to be homogenised. Visually, there are three leopards but Leopard, as a single unit, is framed as being a careful creature.

Rhino the Rhinoceros is presented as a nervous short-sighted NHA and the implicit presupposition is that the way the horns are placed on the front of his face is a consequence of the NHA having poor vision, which is factually inaccurate. He also displays insecurity, as he is scared that elephant, represented as the "pompous animal" would only make fun of him.

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Reluctance of the rhino to ask for help because the elephant is arrogant and would make the rhino feel embarrassed is another negative anthropomorphic trait transposed to the elephant. Axiologically, this representation leads to the assumption that arrogance is linked to untrustworthiness and unreliability.

### 4.3.3 CL 2 summary and the construction of knowledge about NHAs

The didactic aspect of this CL is implicit, predominantly through inference and reinforced by transmediation, but strongly present; NHAs are represented as being the way they are as a result of their shortcomings. In this story, at least two NHAs are presented as being the way they are because of some type of shortcoming exposed in the story. Beyond the fact that this represents a form of homogenisation, in terms of all NHAs being the way they are because of the shortcomings of one individual which is extended to the whole species, it also caricatures the natural morphology of the NHAs and links them to an unfortunate or negative element. The zebra and the rhinoceros fit into this category.

The form of the zebra is presented as being the consequence of his greed. The first layer of interpretation of this representation concerns the fact that his greed led him to be fat, which caused the tearing of his clothes at the seams. The second layer is articulated around his systematic lateness, because he could not resist stopping to eat, which caused him to be late for the selection of his clothes. As he was late, there was only one piece of clothing remaining, which turned out to be too tight because of his greed-induced fatness. Likewise, the rhino misplaced his horn because he had poor vision and was too nervous to ask the arrogant elephant for help, out of fear that he would be ridiculed.

It is also the case that other NHAs, like the jaguar, leopard or antelope, are presented in a more positive way. However, it is worth noting that this more clement framing is dependent on a positive anthropomorphic trait that was transposed to the said NHA, such as the jaguar

being 'brave' and being clad the first, the leopard being 'meticulous' and having the dexterity to sew her own 'fur coat', the antelope choosing the right 'clothes' and 'accessories'. The basic argument is that NHAs who are 'clothed' are better, as they are livelier, less dull and more glamourous.

## 4.4    FINDINGS AND DISCUSSION OF CL 3: *THE TALE OF PETER RABBIT*

This is a children's book that is often considered as a piece of classical children's literature. It tells the story of a family of rabbit and the main character of Peter who puts himself in danger by going to eat vegetables in the garden of a farmer who considers Peter's species as a pest. The images for the pages referenced in this section can be referred to in Appendix R.

### 4.4.1    *Salience*

As is the case with other stories, like *Horrible Bear* and '*Trois Lapins Gourmand*s', the same patterns of anthropomorphic salience can be noted in *The Tale of Peter Rabbit* (ToPR). In other words, the salience of the NHA characters is increased by their anthropomorphisation, notably through clothing and the ability to speak, and the fact of having names, which relates to the ECDA aspect of individuation. However, within this pattern, another aspect appears to be emerging in terms of the paradoxical nature of salience, which was discussed in section 4.2.1 for the book *Horrible Bear*. In ToPR, the level of anthropomorphism is relatively lower when compared to what was presented in '*Horrible Bear*'. The rabbit children, for example, wear only one piece of clothing and shoes, as compared to the bear, which wore a printed t-shirt, shorts and trainers. The goat in *Horrible Bear* was even more heavily clothed, with accessories like a hat and glasses. The posture of the rabbits in ToPR is also closer to the real NHA species, in terms of both bipedalism and quadrupedalism. The physical features of the rabbits are also closer to that of the species in real life, as compared to those of the bear which are heavily

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anthropomorphised; in this sense, ToPR is closer to the representation of NHAs in *Trois Lapins Gourmands* (TLG).

In ToPR, it also appears that there is a further layering of anthropomorphism between adults and children. On pages 66 to 67, for example, Mrs Rabbit is anthropomorphic in her blue dress and white apron standing near the fire place and Peter in a small bed while his sisters have non-anthropomorphic appearance without clothes sitting on hind legs. The rabbit children are sometimes seen without clothes and with instances of more 'animalistic' behaviour in terms of posture and movement, while the mother is always seen wearing her full attire, with a bipedal, anthropomorphic posture.

**Figure 8**

*Anthropomorphism - salience - speciesism continuum*

| Ontological | | Social |
|---|---|---|

| Low anthropomorphism/low salience (High 'animalism') | | High anthropomorphism / high salience (Low 'animalism') |
|---|---|---|
| High human antagonism/dualism | | Low human antagonism/dualism |
| More freedom for pejorative/derogatory/degraded representations | | Less freedom for pejorative/derogatory/degraded representations |
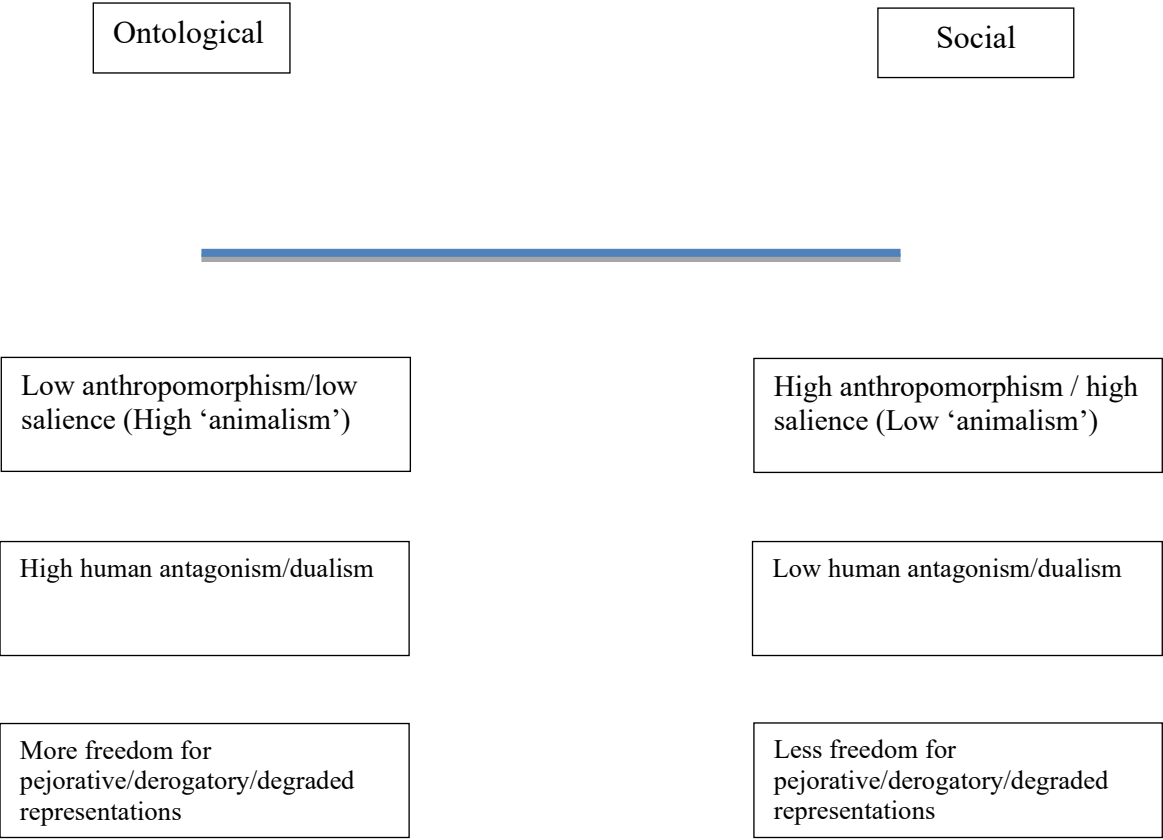
There are varying levels of anthropomorphism across the three stories *Horrible Bear Trois Lapins Gourmand* and *The Tale of Peter Rabbit*. So far, these varying levels point to a certain form of organisation in a continuum (see Figure 8 below), where the degree of anthropomorphism ascribed to the characters seems to be related to how humans behave with them.

From my observations so far, with respect to the three different stories analysed, there appears to be a continuum relating to the degree of anthropocentrism and salience associated to NHA characters, and:

i)   how humans behave and define their relationships with them within the story, and

ii)  the degree of freedom the author has to represent the characters in pejorative, derogatory or degraded ways (textually and visually).

The left end of the continuum involves NHA characters which have low degrees of anthropomorphism, and therefore low salience, while simultaneously having more animalistic traits. For example, it can be, like the case of the *Greedy Zebra*, a NHA which has only speech as the anthropomorphic trait. The lower the degree of anthropomorphism, the higher the level of human antagonism/dualism, and the higher the freedom for the author to represent the NHA characters in a pejorative sense. The antagonism can be ontological, in the case of ToPR, where there is a form of predatory behaviour from the human to the rabbit.

In contrast, the right-hand end of the continuum implies highly anthropomorphic, and therefore highly salient, NHA characters, like the case of the bear in *Horrible Bear*. The degree of antagonism or dualism with humans is lower, and there is less freedom for the author to use pejorative constructions as it may be read as being more directly related to humans. In this sense, the opposition is not ontological but more social; in *Horrible Bear*, for example, there are different instances where the human-NHA power relationship is highlighted, notably

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through the visual representations. This links back to the salience paradox proposed in section 4.2.1. The high anthropomorphism of the NHA character paradoxically gives individuation to the NHA in the story, but partially takes away the salience of the real life NHA in the process of the character's representation as a metaphorical or symbolic human being, who is less likely to be referred to pejoratively.

### 4.4.2 Dualistic anthropocentrism

As in the case of *Horrible Bear*, ToPR also features a dualistic presentation of humans and NHAs. The contrast is higher in ToPR however, partially owing to the relatively lower degree of anthropomorphism in the story. In *Horrible Bear*, interspecies speech intelligibility was possible, while the same cannot be said for ToPR. The dualism is further reinforced by the clear presence of anthropocentrism. On pages 10 to 11, the mother rabbit tells the children that their "… Father had and accident there; he was put in a pie by Mrs McGregor". Here, it is inferred that rabbits are an ingredient to be put in the pies made by humans, thereby implying a consumer-consumed and hunter-hunted vertical relationship.

The illustration is complementary showing Mrs McGregor bringing a large pie to the dinner table, a hungry child behind her, a hungry dog next to her, and hands on the table holding a knife and fork. On pages 38 to 39, Mr McGregor came up with a sieve, which he intended to pop over Peter who was stuck in the garden, but Peter wriggled out just in time, leaving his jacket behind him. The anthropocentrism is apparent through the inference that Mr McGregor intended to catch Peter in the sieve, which further links to Mrs Rabbit's warning in pages 8 to 11. On pages 44 to 45, another instance reinforces this strong dualism (see Appendix R), through textual indicators of anthropocentric inference and causality relationships:

i) Mr McGregor was "looking under each" flower - pot to find Peter because he wants to catch the rabbit.

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ii) He wants to catch the rabbit to kill/cook him like he did to Peter's father.

The same hunter-hunted behaviour is depicted on pages 42 to 43, with the illustration being symmetrical with the text; it shows Peter hiding while Mr McGregor was looking for him. Mr McGregor who tries to put his foot on the rabbit leads to the assumption that he is trying to immobilise and injure the NHA. This is complemented by the illustration showing spikes on the sole of his shoe. This is also shown through a causality relationship as Mr McGregor stopped chasing and tried to immobilise the rabbit because "he was tired of running after Peter". This sequence features the non-anthropomorphic appearance of the rabbit, which further reinforces the human-NHA dualistic presentation. The anthropocentric-dualistic ideology is not only directed towards the rabbit, but also towards other species. On pages 60 to 61, "Mr McGregor hung up the little jacket and the shoes for a scarecrow to frighten the blackbirds". Blackbirds are thus represented as nuisances with respect to the vegetables Mr. McGregor is cultivating in his garden; the presupposition, here, is that in frightening the blackbirds Mr McGregor will keep them away from his garden.

Beyond the direct human-NHA dichotomy, the dualism extends to the world humans and rabbits live in, in the sense that they have their own specificities despite overlapping behavioural patterns. This dissociation is reminiscent of that which is usually operated between the anthroposphere and the biosphere. On pages 14 to 15, "Mrs Rabbit took a basket and umbrella…to the baker's. She bought a loaf of brown bread and five currant buns." This anthropomorphic presentation is also related to the inference that the rabbits exist in a world where they purchase goods rather than only gathering food in nature. Likewise, on pages 58 to 59, the woods are presented as being a safe space for rabbits while gardens owned by humans are not. The illustration is complementary; Peter is seen running underneath the gate and Mr McGregor in the background running after him waving his rake and holding his fist up in the air aggressively, similar to the illustration on page 28 (see Appendix R).

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The garden also represents a sort of alluring space where the best foods and gustatory gratification can be found. On page 22, Peter is eating radishes while wearing his blue blazer and shoes. Though not directly stated in the text or shown in the illustration, there is an inference of anthropocentrism that he is eating the radishes of the human gardener, which corresponds to a capitalist logic, as an emergent theme, linking back to Mrs Rabbit buying goods. As can be seen in this section, the level of dualistic anthropocentrism is significant in ToPR, contrasting with stories like *Greedy Zebra, Horrible Bear* and even *Trois Lapins Gourmands*.

### 4.4.3 *The permeation of capitalistic logic*

An emerging element from the analysis of ToPR concerns the permeation of capitalistic logic (Bang & Door, 2007) in the story, which is a nuanced form of logic influenced by capitalism. On page 22, though not directly stated in the text or shown in the illustration, there is an inference of anthropocentrism that Peter is eating the radishes of the human gardener Mr McGregor. The vegetables, as well as the garden, are properties of Mr. McGregor and the food he is growing belongs exclusively to him and his family. This is reinforced by how Mr. McGregor calls Peter a thief on page 28. Beyond the apparent anthropocentrism present as Mr McGregor chases after Peter for being in his garden, the rabbit is represented negatively as a thief of vegetables in the human's garden.

A surface layer interpretation of this situation links back to anthropocentrism, in the sense that rabbits are seen as pests in the garden, and should be eliminated. A deeper layer, however, reveals the transversality of the capitalistic logic (Bang & Door, 2007), which is also replicated in the NHA world, with Mrs Rabbit buying goods and bread. There is a certain level of market value associated with items for consumption, whether it concerns the human or the NHA world. This is significant with respect to implicit, passive didacticism as, beyond the

anthropocentric ideology, it also conveys the capitalist mode of functioning that is prevalent in today's world, albeit with lesser intensity in the children's books.

### 4.4.4   NHA stereotypes

ToPR, in one instance, also points to the element of stereotypes associated to NHAs. On page 53, "Peter thought it best to go away without speaking to her [the cat]; he had heard about cats from his cousin, little Benjamin Bunny". There is an underlying assumption about cats from what his cousin Benjamin has told him; the stereotypical assumption leads to an element of causality, leading Peter to go away without even speaking to the cat. Cats are therefore framed as NHAs that rabbits should be wary of and not speak to. It also leads to the common representation of cats being sneaky.

### 4.4.5   CL 3 summary and the element of didacticism

In ToPR, the element of didacticism is present mostly through the establishment of causality relationships between warning and action, and on projected good behaviour by the non-naughty rabbits. In other words, Peter represented the character who was naughty, did not heed his mother's advice and ended up being in trouble as a consequence of not listening to the adult, whereas it is shown on pages 16 to17,  that "Flopsy, Mopsy, and Cotton-tail, who were good little bunnies, [and] went down the lane to gather blackberries". The actions and behaviour of Peter's siblings are evaluated as being good because they listened to their mother. The axiological dimension is highlighted here in terms of cultural didacticism; one must obey one's parents, otherwise one is 'not good'. This is explicitly contrasted by the behaviour of Peter whose activity is evaluated as being naughty because he disobeyed his mother.

The story, as a narrative unit, is articulated around this didactic-moralistic dimension. This moralistic aspect is further consolidated at the end of the story. On pages 66 to 67, the text "I am sorry to say that Peter was not very well during the evening" has a dual purpose. In the

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first place, the term 'sorry' evokes a level of sympathy. In the second place, the statement establishes a causality relationship through the inference that Peter was not well because of what had happened to him being chased in Mr McGregor's garden. Another consequence of this situation is highlighted on pages 68 to 69: "[But] Flopsy, Mopsy, and Cotton-tail had bread and milk and blackberries for supper". The use of 'but', inferred by contrast that they are having a better dinner than Peter because they did not go into the garden like he did. Consequently, Flopsy, Mopsy, and Cotton-tail were able to enjoy a better dinner than Peter, implying that rabbits who obey their mothers and do not go into human gardens are rewarded while disobedient rabbits like Peter, end up in danger, frightened and ill. In terms of NHAs represented as metaphorical or symbolic humans, this provides an evaluation of good and bad behaviour for creatures who obey or disobey their parents.

Another implicit didactic element relates to spatial organisation and projected desire. The garden represents an alluring space which symbolises abundance and enticing food, but at the same time, is full of danger and implies extreme risks. This space is contrasted with the woods, which represents a safe space for rabbits. In ToPR, Peter was tempted by the alluring prospect and, in the end, got stuck in a life-threatening situation. At a less direct level, on pages 48 to 49, the statement that there was "no room for a fat little rabbit to squeeze underneath" establishes a causality relationship between being fat and the inability to escape a difficult situation. This didactic aspect of the garden as an alluring space, but not safe for NHAs, is discussed in section 4.11.3, in relation to capitalistic logic (Bang & Door, 2007).

Having now presented the findings and discussions for the three children's books in English, the following section begins the findings and discussions component of the children's literature in French. Section 4.5 presents the analysis of *Joyeux Noel*, section 4.6 for *Le Loup Vengeur*, and section 4.7 for *Trois Petits Lapins Gourmands*.

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## 4.5 FINDINGS AND DISCUSSION OF CL 4: *JOYEUX NOEL*

This children's book tells a short and simple story about a dog who imagines receiving different Christmas gifts and wondering what would be the best gift he'd enjoy the most. The images for the pages referenced in this section can be referred to in Appendix S.

### 4.5.1 *From mild anthropomorphism to voluntary anthropocentrism*

The main anthropomorphic features ascribed to NHA characters in this story are related to the main character wearing a Christmas hat and having the ability to speak, as well as occasional bipedalism. On the cover page, the dog is also given salience through individuation, notably via the proper name "Superchien" (Superdog). Even through the reindeer, who is introduced on page 1, and the dog are wearing Christmas hats, it can be argued that the accessory in itself is not necessarily an absolute indicator of anthropomorphism as pet owners quite commonly have their pets wear such kinds of items, especially during festive seasons. On the other hand, the dog's shift to a bipedal posture on page 1 could be considered as an anthropomorphic change, as it is accompanied by the first instance of speaking, along with an indicator of self-consciousness (Qui, moi? [Who, me?]).

This mild form of anthropomorphism, in terms of the ability to speak, coincides with an anthropocentric frame of thinking that converges towards, what I refer to as, a form of voluntary anthropocentrism. The dog appears to wish for gifts which symbolise his human ownership, thus leading the reader to infer that he is content with his situation as a pet being tied to a pole. On pages 7 to 8, for example, he wonders whether his gift is a new collar, which implies that the dog is happy wearing a collar as a symbol of ownership. In the accompanying illustration (see Appendix S), the dog is shown imagining a collar which looks golden, as an 'upgraded' version of the red one he is wearing. The dog looks up smiling as he imagines the

collar; this is anthropocentric as the dog is framed and defined as being a NHA owned by and subordinated to humans.

This is further substantiated on pages 9 to 10 (see Appendix S), where he is thinking of a new pole; the dog is happily wondering if his surprise for Christmas will be a new device to which he will be tied. The illustration is complementary, as the pole is shown to turn into a decorated Christmas tree that the dog is tied to with a long black string. Much like the collar, the dog seems happy thinking of an anthropocentric symbol of ownership as a gift. At the same time, there is a form of erasure of the identity of the dog, as an individual being who exists on his own, through the speculation of such types of gifts. In terms of the potential impact on children's learning, such representations reinforce the subordinate position of NHAs as pets and could encourage children to construct their representations of dogs as NHAs that are happy being tied to a pole on leash.

Such an anthropocentric stance culminates towards the end of the story through a paradox. On pages 17 to 18, the dog wishes for some freedom when he exclaims "Enfait, j'aimerais un brin de liberté !" (In fact, I would like a bit of freedom!). The use of the term 'un brin' (a bit of) leads to the assumption that the dog is always tied to the picket and wishes for a change as his Christmas surprise. The accompanying (see Appendix S) illustration is symmetrical and features the dog contemplating his freedom while holding the cord that attaches him by the collar to the pole; his head is lowered, looking down at the cord in a relatively serious way.

On pages 19 to 24, the dog uses his paws to open the gift and hold the scissors, and it is inferred that he cuts the cord with the scissors too, though we do not see the dog perform the action. This implies that his desire for freedom has materialised. The accompanying illustration is complementary (see Appendix S), showing a series of pictures as follows: the dog gets a gift

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with a dashed line inferring it fell from above, he opens the gift to find that it is a large pair of scissors and, on page 24, only the pole is shown with the cord cut and scissors on the floor. It is therefore inferred that that the dog has cut the cord and gets his freedom. What follows, however, is paradoxical and strongly reinforces the notion of voluntary anthropocentrism. On pages 25 to 26, the dog exclaims: "He, je suis encore là!" (Oh, I'm still here!)". 'Oh' indicates that the dog is surprised to be still there.

In the accompanying illustration (see Appendix S), the dog is shown with his paws on his hips looking down at the cord attached to his collar, inferring that he is wondering what has happened. It is worth noting that the illustration does not show the whole cord, which leaves the reader questioning whether the cord is cut or not. However, the cord is not on the ground and still appears to be attached to something. This corroborates with the illustration on pages 27 to 28 where it is shown that the cord, despite having been cut, is reattached with a knot. The text states the following :"Et oui! Superchien est bien trop attaché à son piquet!" (And yes! Superchien is much too attached to his picket!). The illustration is complementary (see Appendix S), showing the dog holding the pole with one arm wrapped around it 'hugging' it and with his head up smiling, throwing his Christmas hat away in the air. The cord is also shown to have a knot implying that the dog himself reattached it of his own volition. The dog is represented as being attached, both physically and emotionally, to his captivity and that he willingly and happily stays tied to the pole even when given the option to be free as he had wished to be.

This story is revealing and useful in the conceptualisation of mild anthropocentrism and voluntary anthropocentrism present in CL. In this case, the dog's existence is clearly seen as being 'tied' and owned by humans, and he is content with the situation, even wanting gifts that symbolise the ownership. This is crystallised by the paradoxical ending. Despite wanting freedom, the dog almost unconsciously ties his cord back after having cut it, implying that he

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is happy being owned by a human, which simultaneously decreases his freedom. Hence, the dog is 'party to' this form of anthropocentrism, which is imprinted in his subconscious, representing the character's own voluntary anthropocentrism.

In addition to this, the dog is framed in a reductive way as a lonely, noise-maker who, on pages 13 to 14, wishes to 'finally' have some friends ("…en fin quel ques ami"), which appear in the form of wolves that he can howl with ("pour hurler en leur compagnie"). This is foregrounded as the only social activity for the dog. The potential impact on children's active construction of knowledge about NHAs and the biosphere is the implication that such anthropocentric treatment of pet dogs is not only acceptable, but that dogs voluntarily participate and agree with such anthropocentrism as they are little more than noisy NHAs who enjoy howling. This could lead to the formation of negative representations of dogs and potentially shape how children interact with and treat them as NHAs, with thoughts, feelings, and behaviours, and/or as pets.

### 4.5.2 *CL 4 summary and the question of didacticism*

While there is no apparent active didactic streak running through this story, it leads me to question the ideological elements being transmitted through the text. This is notable for the anthropocentrism intricately meshed with the text, which is quite insidious given that there appears to be a form of delocalised volition and voluntary anthropocentrism. In this case, the dog likes and is attached to the concept of being owned by and defined in subordination with humans. He happily accepts this and would not really change the situation, despite having certain desires for freedom, which turned out to be fleeting and fundamentally unnecessary to the NHA. Taking into consideration my conceptualisation of the child as an active meaning-maker, this is particularly significant as children could focus on such implicit information to construct and/or consolidate their representations of NHAs and the biosphere. This is complemented by the capacity to build their representations further through transmediation as

the visual dimension of the story is strongly complementary to the text and strengthens the voluntary anthropocentrism ideology.

## 4.6 FINDINGS AND DISCUSSION OF CL 5: *LE LOUP VENGEUR*

The next CL in French is the story of a 'vengeful wolf' (Loup Vengeur) who wants to usurp power, tries to enact his vengeance against other NHAs as he is jealous of a chevrotain (a hoofed mammal also known as a mouse deer), and plots the latter's murder. The wolf is ultimately unsuccessful despite his attempts and the story puts forward a very strong speciesist framing of the wolf as evil and villainous. The images for the pages referenced in this section can be referred to in Appendix T.

### 4.6.1 *Anthropomorphised speciesism and vilification*

The story features a dual layer of speciesism, the first being that the wolf is a traditionally vilified NHA character in stories, notably in CL when considering the relatively common representation of the 'big bad wolf' in *Little Red Riding Hood* or *The Three Little Pigs*. This story follows the same pattern, with the wolf framed as a 'vengeful' and 'vindictive' creature, as from the cover page in terms of the title (text) and the illustration (art). This indicates a similar representation reinforced by transmediation as observed in the *Greedy Zebra*.

Following this generally negative representation, the second layer concerns the transposition of negative traits generally associated with human beings to the wolf, which contributes to consolidating the patterns that emerged for NHA representations in English also, in both *Horrible Bear* and *Greedy Zebra*. The wolf is only lightly anthropomorphic as he has the able to speak and is able to stand in a bipedal posture, but does not have a proper name. Coming back to the negative framing for how the wolf is represented, it can be argued that such traits are anthropocentric as they are essentially human qualities, and the transposition of these to the wolf adds to the speciesism already present in the first layer mentioned above. The same

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argument therefore applies to the anthropocentric traits used to frame the NHA characters in *Horrible Bear*, *Greedy Zebra* and, to a lesser extent, the negative inferences made towards Peter Rabbit.

An emerging question concerns the implicit level of appraisal patterns: is the wolf 'bad' because he is 'vindictive'? Or is the fact of being vindictive a trait of the wolf who is already represented as being 'bad'? Another question concerns the extent to which NHAs can manifest the trait of being 'vindictive'. In this particular CL, there appears to be a general framing of the wolf in terms of the transposed negative human traits (jealousy, envy, vindictiveness, plotting, murderous attitude, premeditation to do harm) which can be challenged in terms of the lack of exhibition/non-exhibition of those traits among species other than humans. This type of speciesism continues on page 2 (see Appendix T), notably through the use of lexical items which reinforce the attribution of traditionally human negative traits to the wolf. Some examples of linguistic analysis for these key instances of speciesist discourse are as follows:

i) 'M. Loup était un type très rusé' ('Mr. Wolf was someone very clever'): The capitalisation indicates the title 'Mr', which is anthropomorphic and gives a surface layer of salience to the wolf. The term 'un type' is familiar and can be used in derogatory comments, such as in this case, with the postposition of the adjective 'rusé' (clever) used in a negative way.

ii) 'Il était très malhonnête et aimait tromper les autres animaux' ('He was very dishonest and loved deceiving/conning other animals'): Here, we have an example of clausal relationships as the sentence relates to the previous one thereby supporting the previous statements around 'rusé' (clever, sly). 'Très malhonnête' means 'very dishonest' (Voc+Rw+Gs) and is an example vocabulary reinforcing ideology around negative anthropomorphic traits transposed to the wolf; 'very' accentuates the dishonesty.

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Similarly, in the expression 'aimait tromper' (Voc+Rw+Gs) – 'tromper' means deceive and 'aimait' means love. The relationship between words indicates that the deception is linked to a premeditation on the part of the wolf, indicating a certain level of volition, which is a speciesist representation.

iii) 'Un jour, M. Loup décida de se débarrasser du chevrotain' (One day, Mr Wolf decided to get rid of the chevrotain): In this example, 'décida' indicates volition to harm, and the relationship with the previous sentence (see Appendix T) indicates that the motivation for this decision was jealousy. The wolf is represented as a malicious, vindictive being who plots against the chevrotain and wishes, with premeditation, to harm him.

iv) 'J'ai un plan pour piéger le chevrotain' (I have a plan to trap the chevrotain): This is an example which supports the anaphoric references in previous pages and simultaneously adds to the framing of the wolf.

v) The clause 'Rempli de jalousie et du désir de vengeance...' (Filled with jealousy and the desire for vengeance...) points to the wolf's actions as determined by his degree of, fundamentally human, traits of jealousy, desire, and vengeance. The expression 'desire for vengeance' also indicates volition and wanting to exact his vengeance as a driving force for his actions. The visual aspect is however contradictory as the wolf is depicted as a smiling, jumping, visually happy character and only the chevrotain seems worried (see Appendix T). The textual information, which points to a certain type of framing, can be contradictory to the visual aspect and may be potentially confusing for the reader as the contradiction does not appear to serve any clear explicit stylistic purpose.

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The framing of the wolf as an evil plotting murderer gains momentum as the narrative unfurls. On page 3, the vocabulary as well as the way the sentences and clauses are woven together to consolidate this character depiction. There are assumptions and presuppositions further implying that the wolf is lazy. For example, in the sentence 'si je deviens juge, je n'aurai plus à chasser' (If I become judge [of the jungle], then I won't have to hunt anymore), the two clauses establish a clear conditional causality relationship (Rc+Er+Pr) between the usurpation of the position of Mr. Chevrotain and the removal of the need to hunt. In turn, this points towards laziness as the wolf plans usurpation of power through the killing of the chevrotain rather than through any form of hard work to reach that position of judge in the jungle.  In terms of impact on children's construction of knowledge, the representations are strongly grounded in framing and ideology; the implication of these assumptions and presuppositions are that the wolf is a murderer with ability to premeditate his crime. The visual aspect is complementary as the wolf is depicted as actively plotting against the chevrotain.

Another element which is later added to the character of the wolf is deceit. The sentence on page 6, 'il ne pouvait se laisser voir son vrai jour devant les autres animaux de la foret' (he could not let his true day [intent] be seen in front of the other animals of the forest) shows that the wolf is strategically using politeness as a form of deceit to actively dissimulate his evil vindictive nature. Deceit is complemented by lies on page 8, where the wolf is lying about the magic leaf which is part of his plan to get rid of the chevrotain: 'ce était qu'une partie du plan du loup pour se débarrasser du chevrotain' (it is just a plan of the wolf to get rid of the chevrotain). The same pattern is repeated on the subsequent page (see Appendix T) with the statement 'Il prétendit être très accablé quand il leur dit...' (He pretended to be very overwhelmed when he told them ...).

At the end of the story, Mr Chevrotain and Mr Elephant are seen plotting to 'teach the wolf a lesson'. Here, we are given an example showing that it is not only the wolf who has the

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ability to plot, indicating that anthropomorphic traits transposed on to the chevrotain and elephant as well. The two NHAs are now plotting to get their own revenge on the wolf for his actions. In contrast however, the representation of these two NHAs is considerably less speciesist than the framing of the wolf. Though they engage in similar 'plotting for vengeance', the wolf's actions are represented as considerably more vile and malevolent. Children may, therefore, learn to consider such anthropocentric behaviours as acceptable, in certain contexts, for some NHAs but not for wolves; the latter are indirectly evaluated as being more wicked.

### 4.6.2 *CL 5 summary and speciesist didacticism*

As per the ECDA framework used, *Le Loup Vengeur* mainly features representations in the form of ideology and framing. Anthropocentric elements are transposed to mildly anthropomorphic NHAs, with a foregrounded depiction of an evil, lying, plotting, lazy wolf who is a manipulative, vindictive, and selfish being. In terms of didacticism and children's learning about NHAs and the biosphere, repetitive patterns are noted through the pages of the book, which consolidate the initial framing of the wolf throughout the story.

This corresponds to the information obtained from visual analysis, with notable predominance of ideology and framing. Additionally, anaphora as a literary device is an emergent aspect in this CL particularly, especially for relationships with words, sentences, and clauses. The excessive vilification of the wolf also coincides with a mild form of anthropomorphism of the NHAs in general. The wolf does not have a name, with only the title Mr. giving a certain form of individuation, neither does he wear clothes; this is the case for all NHAs in the story. The only notable visual anthropomorphic traits are posture and the ability to speak. This low degree of anthropomorphism is contrasted by the significantly high degree of speciesism and the attribution of negative anthropocentric traits to the wolf, and to a much lesser extent, the elephant and the chevrotain, thus reinforcing the arguments presented in

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section 4.4.1, in which I discussed salience and presented the anthropomorphism - salience - speciesism continuum (see Figure 8).

One of the passive didacticism anchors of this story appears to be rooted within the axiological dimension, notably the moralistic lesson around how being an evil, lying, plotting, premeditative potential 'murderer' will lead to nothing but trouble. However, the story is based on the transposition and condensation of all negative human traits to the one NHA character of the wolf. The story therefore replicates the very common and general vilification patterns often present in stories where the wolf is the villain or the main antagonist. The constant, almost relentless repetition of this pattern of vilification within this story potentially leads the active meaning-making reader to construct and cement this representation of the wolf as a vile creature. Through repeated use of specific vocabulary, causal relationships between the clauses and framing strategies, the story is therefore strongly oriented towards an anthropocentric and speciesist ideology.

This children's book is a significant example for the need to reflect on ecologically responsible language and discourse in CL, as children's exposure to such anthropocentric and speciesist ideology could lead to the formation of ecologically harmful representations and the perpetuation of negative discourses and understandings of NHAs in various cultural contexts. For children in Mauritius, this may be particularly destructive (Stibbe, 2014) as the wolf is not a NHA present in the local environment and therefore construction of knowledge about wolves is often based on exogenous stories and the representations contained therein.

## 4.7    FINDINGS AND DISCUSSION OF CL 6: *TROIS PETITS LAPINS GOURMANDS*

*Trois Petits Lapins Gourmands* (Three Little Greedy Rabbits) is a tale of three sibling rabbits who eat all the jam prepared by another NHA and debate on whether to tell the truth or to lie. The didactic aspect is relatively apparent in this story, as the NHAs function as metaphorical

or symbolic humans (Burke & Copenhaver, 2004; Huggan & Tiffin, 2010; Tüür & Tønnessen, 2014), which is discussed in section 2.2.2 of the Literature Review. The images for the pages referenced in this section can be referred to in Appendix U.

### 4.7.1 Anthropomorphism, anthropocentrism, and salience

The story bears similarities with *Greedy Zebra*, starting from the title, as the same theme of greed is treated here in French. I argue that the weight of transmediation is highest at the beginning of the texts themselves, in the sense that they orient the reader/active meaning-maker towards the general content of the text. This is evidenced by the complementarity between the text and the illustrations; in this case rabbits appear as greedy beings eating jam with three empty jars, and jam on their clothes and faces, as one rabbit licks the rim of the jar (see Appendix U). Unlike *Greedy Zebra*, though, the three rabbits were clothes and are more anthropomorphic in that sense.

Another parallel can be made with *Greedy Zebra*, as the story revolves around NHA fur being considered as clothing. NHAs generally appear with a high level of anthropomorphic traits in terms of their clothing, ability to speak, activities such as cooking and relaxing on a couch with a blanket. These anthropomorphic traits are immediately visible through the accompanying visual dimension presented in the illustrations (see Appendix U). Some examples are:

- Page 6 – rabbit wearing a red polka dot top
- Page 10 – squirrel wearing a hat
- Pages 12-13 – mole wearing an apron and bonnet
- Pages 17-18 – rabbits wearing blouses and an owl wearing a red neck scarf

Like the previous CL, this contributes to strengthening the argument for the anthropomorphism - salience - speciesism continuum (see Figure 8) and the salience-paradox

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discussed in section 4.2.1; as the NHAs are given a high level of anthropomorphism their characters are thus given a high level of salience and this consequently creates a paradox as the real-life NHA is concomitantly erased in preference of human/human-like qualities. In a striking contrast, the character of 'Noiraude' is an exception to the high anthropomorphic representation as she is a non-clothes wearing black hen who uses her beak, rather than her wings (as the real life NHA would), to help the rabbits find berries:

> *Son amie Noiraude pourra lui indiquer ou en trouver* [Her friend Noiraude can tell her where to find them.]

The juxtaposition of this NHA character in relation to the others is made evident in the anthropomorphic dissimilarity and via the linguistic patterns of Vocabulary (Voc), relationship between words (Rw) and how participants are represented (Pr) manifested in ideology, which were discussed in section 2.18.1 of the Literature Review.

In relation to the three abovementioned linguistic patterns, Noiraude translates to 'swarthy' and is connotative of 'darky' which is potentially highly pejorative; this is reflected in the dark colour of the NHA which stands out visually against the generally light coloured illustrations (see Appendix U) and, additionally, she is referred to as a friend with no formal title like Dame.

### 4.7.2 Titles as a form of anthropocentrism

In this story, adult NHAs have titles like 'Mr'; some examples are 'Dame Peluche', 'Madame Houppelande', 'Monsieur Blaidoret', and 'Monsieur Isidore'. It can be argued that such denominative practices are anthropomorphic in nature and complement the general anthropomorphic presentation of the NHA characters in the story. This is also a form of individuation and salience, with each NHA character having its own identity, name, and title. Concomitantly, this also replicates human societal norms with respect to how interlocutors,

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especially adults, must be addressed. In this sense, the text is also a vector of passive cultural didacticism, pointing towards an axiological dimension pertaining to the notion of respect. Taking this into consideration, the representation of Noiraude appears incongruous with the anthropomorphic salience of the other NHAs.

In terms of cultural didacticism in relation to possible speciesist interpretations of Noiraude, there appears to be a distinct link between 'darkness, blackness, swarthiness' and implicit inferiority, in this story. This gives weight to Singer's (1975) argument that speciesism is a form of racism; additionally, it raises pertinent questions regarding the association of 'black' as subordinate and other negative connotations. Whilst this may initially appear 'far-fetched' given the singular example in this story and is, in many ways, beyond the scope of the research aims and questions, it struck me as a noteworthy reflection in relation to both ecologically responsible discourse and socio-culturally responsible discourse. I argue that this is an important point of reflection in the current climate of on-going racial injustices so that we give due consideration to the impact that our choice of words has on collectively constructed cultural-representations of not only NHAs as symbolic humans, but the very real humans that underpin these representational forms. Noiraude appears, subtly, as yet another potentially harmful representation and negative way of symbolising blackness to sit alongside the connotations of black cats, black sheep, black dogs, black market, black list, black out, black magic, black hands, black eyes, black death, black lives.

### 4.7.3   CL 6 summary and moral cultural didacticism

The story highlights numerous instances of salience as the predominant form of representation imbued with ideological issues in terms of NHA characters as symbolic humans; the story also has a moral dimension to it which is a form of cultural didacticism. The rabbits are shown confessing truthfully to having eaten the jam and are represented as feeling guilty about it, indicating a causality relationship that they feel guilty because they ate something that was for

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Dame Peluche. This form of passive moral cultural didacticism is closely linked to the axiological dimension as it is grounded in the transmission of values. This is significant in terms of pedagogical implications, despite the anthropocentric discourse, as the story provides children with an interesting tale regarding truth-telling and not being greedy. In terms of meaning making, children could develop moral values whilst simultaneously consolidating their representations of NHAs and the biosphere.

The following sections now move from CL in French to CL in Kreol Morisien. Sections 4.8 to 4.10 present the findings and discussions for the three random sampled children's books written in KM by Mauritian writers. A synthesis of the main themes from the nine children's books is subsequently presented in the final section of this chapter.

## 4.8   FINDINGS AND DISCUSSION OF CL 7: *SINN SINN*

The first story presented in KM narrates a day in the life of the mildly anthropomorphic, titular character Sinn Sinn who is a caterpillar living in a garden. It is a trilingual story, with translations of the Kreol text in English and Bhojpuri. The images for the pages referenced in this section can be referred to in Appendix V.

### 4.8.1   *Anthropomorphism and the elicitation of sympathy*

Sinn Sinn retains the physical features of a caterpillar, and his anthropomorphic traits are at the level of his face, with human-like features, the ability to speak, and the ability to understand human language. On page 7, Sinn Sinn understands the gardener's threatening words and is hiding under a leaf looking very scared with wide eyes and a wavy line to indicate a trembling mouth. Anthropomorphism functions as a means to also give him salience through individuation alongside the use of his proper name for the title and throughout the story. The pronoun 'he' in the English translation underneath the KM text (pronoun 'li' in KM is neutral) is also another indicator.

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As an example of linguistic analysis on page 3, the expressions 'ti baba' and 'tuni tuni' ('baby', 'naked') represent anthropomorphic traits attributed to the insect, as 'ti baba' is mainly a human-centred term and nakedness is a concept applicable only to humans. The reduplication of the word 'tuni tuni' (Rw+Gs) also adds a mild comical value to the description, which links to a causality relationship (Rc), namely that being naked causes the insect to be cold which, in turn, causes him to eat lots of leaves. Sinn Sinn is therefore represented as a baby, with the birth represented as an 'anthropomorphised event': "In a garden a baby insect is born. His name is Sinn Sinn" (Pr+Er). There is no sign of who gave birth to him or who named him and he appears alone crying on the leaf, which evokes the reader's sympathy for the character.

It can be argued that Sinn Sinn is framed as a helpless baby who suddenly found himself alone on a leaf. On the visual side, Sinn Sinn is shown as a yellow insect crying on a leaf with his mouth wide open, eyes closed, and arms/legs up in the air; the images, however, appear to be photographs of paper collage art and not illustrations. It is a stylistic choice which gives a form of shadow to the paper pieces and creates a 3D-like effect thereby creating more engagement with the text with regard to the age and level of the reader. The anthropomorphic traits attributed to Sinn Sinn in terms of facial expressions, body gestures, and speech give him salience whilst maintaining some NHA qualities, and at the same time partly frame him as a vulnerable NHA character deserving of sympathy and compassion.

### 4.8.2   Dialectic of the pest and the baby

Sinn Sinn is only partly framed as deserving sympathy and compassion because on page 7, the character is indirectly framed as a pest, through the inference that he is making holes in the leaves of the gardener, Bonom Mustas (Moustache Guy), who decided to use pesticides. This framing contrasts starkly with the introduction where Sinn Sinn is presented as a naked baby needing to eat so he does not feel cold. Even though Bonom Mustas says the rain will kill 'all'

who eat his leaves, the salience given to Sinn Sinn through individuation presents the story as targeting him only, and then caterpillars in general by extension.

### 4.8.3  *Anthropocentrism and capitalistic logic*

There is a certain level of anthropocentrism present in the text, articulated around the garden owner, Bonom Mustas. The garden ('so zardin') is his property, marked by the possessive adjective 'so' (which is neutral in KM but means 'his' in this context as the garden owner is male), as are the vegetables he is growing. On page 4, Bonom Mustas is represented visually as frowning, bent over with hand on his hip looking at a leaf with holes and asking who made the holes (see Appendix V); it is inferred that Sinn Sinn made the holes in the leaves, damaging 'his' property of the man and this capitalistic logic is also seen in ToPR where Peter Rabbit is considered a pest in the garden by Mr McGregor.

### 4.8.4  *The rain: euphemism for pesticide*

On page 7, Bonom Mustas gets angry as a result of the holes he noticed in his plants, implying that plant-eating insects are a nuisance; consequently, "Li dir li pu fer enn lapli tonbe pu tuy tu saki manz so fey" (He says he will make a rain fall that will kill all who eat his leaves). Beyond the fact that the use of 'his' reinforces the notion of property, the expression "fer enn lapli tonbe pu tuy…" (make a rain fall to that will kill…) is a euphemism for pesticide. The language used 'masks' the real activity and chemical products used thereby potentially impacting on children's vocabulary development and their representations of such activities in relation to the environment, with vegetable gardening and use of pesticides being relatively common practice in Mauritius.

The decision of Bonom Mustas, as well as the description of his actions are anthropocentric in nature, as he is thinking of killing everything that eats his leaves in his garden and all creatures he considers as pests without need for second thought to exterminate

them. In the Mauritian context, it is common to use pesticides and I have often heard people saying that caterpillars are 'gorging' on 'their' lettuces/cauliflowers/other leafy veg, reinforcing the notions of plants as property and the NHA as a pest. The cocoon that Sinn Sinn subsequently weaves is presented as a result of Bonom Mustas's decision. On page 8, the 'parcel' that he makes from wrapping 'himself in cotton wool' and banana leaf is a cocoon to protect Sinn Sinn from the pesticide 'rain'. The event is presented as being dire, with Sinn Sinn having to run away from imminent death, and he is very tired and cries softly, which contributes to eliciting sympathy and compassion for his character. The didactic aspect of the story is therefore apparent in the sense of the story highlighting Sinn Sinn's plight and encouraging the reader/active meaning-maker to construct sympathetic representations of the real-life NHA.

Sinn Sinn climbs to the top of a banana tree to escape the pesticide rain that Bonom Mustas makes fall below the trees, where it does not fall on Sinn Sinn. The visual aspect is complementary, as it confirms the inference of 'rain' as a euphemism for pesticide as the illustration shows moustache guy with a pesticide. The events are represented as an escape attempt, showing that Sinn Sinn must run away from human aggression which is due to anthropocentric reasons of agriculture and gardening. The NHA in its natural habitat is to be killed because the natural habitat coincidentally 'belongs' to a human, which is an anthropocentric ownership of a garden.

### 4.8.5   Caring between NHAs

On page 10, a snail comes to talk to Sinn Sinn, frogs sing songs for him and PikPik birds bring him news in the morning. The anthropomorphic creatures in the story are framed as caring, concerned for their friend, and protective of Sinn Sinn. The illustration is symmetrical (see Appendix V), featuring frogs and snails looking sympathetically at Sinn Sinn wrapped up in his cocoon. Even the moon, which is anthropomorphised through the conferment of facial features, appears to be looking down with concern from the top right-hand corner of the page.

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The caring attitude is reinforced on page 13, with the sentence "Buku zanimo dan zardin kontan li, kamarad ar li" (Lots of animals in the garden like him, they're friends with him).

Friendship appears to be a somewhat anthropomorphic trait among the NHAs. This is further substantiated by the representation of this caring behaviour as 'moral support' as Sinn Sinn feels stronger as a result ("Sinn Sinn santi li'nn vinn for, for" [Sinn Sinn feels he's become very strong]). The inference is that the strength has emerged from the care and attention of his NHA friends helping him to cheer up. The illustration is complementary, showing Sinn Sinn beginning to emerge from his cocoon as a butterfly, while a dragonfly and a bird are flying nearby, watching him.

### 4.8.6 CL 7 summary and cultural didacticism

In this story, the active reader and meaning-maker is presented with depictions of Sinn Sinn the caterpillar as an NHA deserving of sympathy and compassionate treatment. Whilst the main protagonist is represented as a pest by the human male character of Bolom Mustas, this representation is juxtaposed with the representation of the character as a parentless baby alone on a leaf trying to survive. This anthropomorphic representation draws the readers' attention to the human behaviour towards Sinn Sinn and contains a didactic element in terms of teaching the reader that we should not exterminate NHAs indiscriminately as they are merely in their natural habitats, trying to survive, and capable of feeling fear. Sinn Sinn's ability to understand human language is an anthropomorphic trait that could encourage children to construct understandings of NHAs as having the ability to understand our words and our intentions, and thus, the ability to react or respond to humans through their behaviours. Additionally, the text also teaches that caterpillars will not eat more than they need to survive, which is a contribution to children's construction of knowledge about the biosphere. The didactic element guides children towards understanding that eating leaves is a necessary part of the caterpillar's

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processes towards becoming a butterfly, which is shown in Sinn Sinn emerging from his cocoon in the final pages of the story.

## 4.9 FINDINGS AND DISCUSSION OF CL 8: *ZISTWAR MUSTIK*

Compared to the other stories selected in the random sample for eco-critical discourse analysis, Zistwar Mustik (ZM) is different. In the first place, it is the only story which appears to have an explicit didactic streak running through it. Its main purpose is to sensitise young readers about the 'dangers' associated with the proliferation of mosquitoes. Besides, Playgroup, the organisation who wrote this text, publishes material in KM for the purpose of pedagogical use with young children within the pre-primary and lower primary settings. The text is contextually grounded as it aims to provide information regarding how mosquitoes reproduce at an accelerated pace depending on human behaviour. The images for the pages referenced in this section can be referred to in Appendix W.

### 4.9.1 *The absence of anthropomorphism and anthropomorphic salience*

This finality of this story, with a specific didactic and informative objective, also appears to have a consequence on how the main protagonists of the story are presented. The mosquito is homogenised as simply a member of its species and does not have any individual characteristic. It is also not anthropomorphised, retaining the 'original' insect traits. This is complemented by the visual dimension, with relatively rough sketches depicting the mosquito with all the physical characteristics of an insect. In this sense, there is no salience attributed to the mosquito.

### 4.9.2 *Framing and evaluation of mosquitos as a nuisance*

The lack of anthropomorphism and salience seem to be related to the 'ease' of framing the mosquito as a nuisance. On page 6, the sentence "Enn gro mustik vini, Li ponn enn kantite dizef lor dilo" (A big mosquito comes. It lays a load of eggs on water). The adjectives 'gro' and 'kantite' support the framing of the mosquito as a nuisance, and the event is presented as

a negative one. Likewise, the same pattern is repeated with the larvae. On page 7, the term 'zigile', meaning 'moving excitedly', is usually used for humans. In this context, it is transposed to the larvae, implying that the latter are moving in an excited way, when it is their natural ability for motion in water. The whole text is based on the presupposition that mosquitoes are nuisances, and leads the reader to infer that one must get rid of stagnant water because mosquitos lay their eggs in these places. There is therefore an implicit evaluation of mosquitos as bad and a *harmful* nuisance; as a consequence, one must deprive them of places where they can breed.

This type of framing is further reinforced on pages 8 and 9. On page 8, 'buku' is used again to accentuate the number of mosquitoes mutating from the large number of larvae. The event, as well as the participants, are presented as annoying and potentially dangerous. The onomatopoeia 'zwiii', repeated two more times, further reinforces the impression of annoyance. On page 9, the mosquitoes are framed as creatures that disturb, attack and harm (sting) humans, with a symmetrical illustration (see Appendix W) featuring parents with angry facial expressions as they swat the mosquitos. The text, through a strategy of repetition around the notion of 'sting/bite', lays emphasis on how mosquitoes can be a major disturbance:

*Papa ek mama tap mustik a drwat*

*Tap mustik a goz…Zwiii, zwiii*

*Par divan, par deryer, lao, anba, zwiii*

*Dad and Mum swat mosquitos on the right*

*Swat mosquitos on the left… zwiii, zwiii*

*In the front, behind, above, below, zwiii*

The text leads the reader to infer that parents cannot sleep because of the mosquitos biting them and the noise being produced by the flight of the insects. It also refers back to pages 1 to 7, with the establishment of clear causality relationships between the proliferation of mosquitos and the annoyance they cause.

### 4.9.3   CL 8 summary the issue of didacticism in relation to human - NHA dualism

A significant element which emerged from the ECDA of this text is the absence of anthropomorphism, and thus, the absence of anthropocentric salience as compared to all the previous CL analysed. The mosquito was homogenised, represented a member of the species, and there is no form of individuation in terms of characterisation. This allowed the author to frame the mosquito exclusively as a nuisance, and a source of disturbance to adults and children. This is complemented by the illustrations, which are monochrome and do not attribute any form of anthropomorphic trait to the mosquitos or the larvae. The antagonism between humans and mosquitos, in this situation, is ontological. Homo sapiens is opposed to anopheles by the very nature of their species, the latter being almost parasitic with respect to the former, which consolidates my proposition that the lower the anthropomorphism/anthropomorphic salience, the higher the antagonism/dualism between humans and concerned NHA (see Figure 8).

Building on this representation of human-NHA dualism, the text has a strong didactic element aiming to sensitise readers about the importance of maintaining a clean environment, in terms of getting rid of stagnant water where mosquitos lay eggs. The contextual dimension is also important, as Mauritius is a tropical island where mosquitos thrive and safety awareness is essential. Mosquitos are often carriers of disease and the didactic element also implicitly links to this. In the past, there have been cases of chikungunya and dengue fever from mosquito bites in Mauritius and there is a need for the public to keep the environment clean to reduce mosquito proliferation and thus reduce potential risk of these tropical diseases. Though diseases

are never mentioned in the story, children are exposed to this didactic element in how mosquitos are framed as nuisances, annoying creatures which will disturb sleep, attack from different directions, and bite/sting humans. The level of didacticism is mostly explicit and directly frames the mosquito as a harmful insect. There is no apparent cultural didacticism, even though the reader will most likely be able to make contextual inferences with respect to mosquitos as vectors of certain diseases.

## 4.10 FINDINGS AND DISCUSSION OF CL 9: *LE BOGUE*

*Le Bogue* is a trilingual text in KM, English and French. Even though I will be focusing on KM, this text represents a test sample in the sense that my analysis will also be articulated around the nuances associated with each language. In addition to the ECDA and general thematic analysis of CL that has been presented so far in this chapter, the sub-sections below include elements specific to English, French, KM, though some commonalities amongst the three languages do appear and are discussed accordingly. In this text, there is a mixture of human and NHA characters. The NHA characters are mildly anthropomorphised, featuring a wolf that happens to be the computer bug infecting a computer and disturbing two children playing a pirated game. The computer-bug-wolf frightens the children and a mouse, transformed from the computer mouse, is the hero and children's saviour. The images for the pages referenced in this section can be referred to in Appendix X.

### 4.10.1 *Highly speciesist discourse and framing of the wolf*

As it is the case with *Le Loup Vengeur*, the wolf is vilified in this story as well, albeit in a different form, as a computer bug/virus is framed as being the ferocious, mildly anthropomorphic wolf. On the cover page, the wolf is framed as a dangerous beast, a menacing monster, notably through artistic choices. The sketch has rough traits, and features a very menacing wolf clutching two humans. It has veiny eyes, sharp teeth on display and drool

trickling from its mouth and looks furious while the humans look distressed and in significant pain. The wolf also has anthropomorphic hands and the image is complementary to the text which adds 'zistwar pou zanfan' (story for children) written in a blood stain style, with the choice of red reinforcing the connotation of danger. In terms of linguistic patterns, linked to the manifestation of ideology, the linguistic analysis of this book is detailed below and can be referenced in Appendix O. In general, the choice of vocabulary as well as the way the author constructs the text associates negative characteristics to the wolf, which is framed as the supervillain of the story.

The first instance where, in terms of vocabulary, the word-concept of 'monster' appears in all three languages is on page 13. It is at this moment that it the reader learns that the bug  is explicitly presented as a monster, specifically a monstrous wolf (see section 4.10.6 for further discussion), and makes computers 'sick'; the consequence of the monstrous wolf causing the computer to be sick is that he must be killed to save the mouse and the computer. In all three languages, the expression "vilin lavwa; vilaine voix; ugly voice" leads to the inference that the wolf is not only a monster, but an ugly NHA with an ugly voice. The example on page 7 illustrates this:

> *Lerla enn vilin lavwa, ki ti fer toulede zanfan gagn ekstra per, koumans irle dan ordinater […] Vilin lavwa la dir […] Lerla latet enn mons koumans grosi lor lekran* [KM]

> *A big voice that startled the two children screamed in the computer […] said the ugly voice […] And the ugly face of a nasty creature invaded the screen* [ENG]

> *Une grosse voix qui fit sursauter les deux enfants, hurla dans l'ordinateur [...]*
>
> *dit la vilaine voix [...] Et la figure bolom loulou d'une vilaine créature envahit*
>
> *l'écran* [FR]

### 4.10.2  Elements specific to KM

One significant aspect of the speciesist discourse noted is the vocabulary which lays stress upon the supposed ugliness of the wolf, with the term 'vilin' (ugly) appearing twice in KM, notably in place of the first instance of 'grosse' and 'big' in French and English respectively. The use of the term 'mons' (monster) in KM also infers that the wolf has a monstrous morphology; whilst in English, the term used is 'nasty creature' and in French it is 'vilaine créature', therefore, the wolf is framed not only as a 'monster' but as an 'ugly monster'.

In the expression "enn mari gro mons", (a very big monster), the adverb 'mari' is an exaggeration in a familiar register to exaggerate the size of the wolf, which consolidates the monstrous morphology of the character. There is also a significant emphasis on big size, notably with the terms "gro mons, gro ledan, gro lizie, gro lapat.", 'gro' meaning 'big' or 'fat'. In KM, therefore, the framing of the wolf as a big, ugly monster could potentially influence children's representations of wolves in real life as they activity construct meaning and understandings of the biosphere in the most commonly spoken home language of the majority of people in Mauritius.

### 4.10.3  Elements specific in English

While there is no use of the term 'monster' in English, the stress is on ugliness and nastiness; the wolf is framed as an "ugly nasty creature" with a distinction maintained between KM (monster) as opposed to 'creature'. However, contrary to French and KM, where the terms 'pattes' and 'lapat' (paws) are used, the use of 'claws' in English connotes additional aggression as compared to the other languages and introduces a new derogatory lexical element

for the wolf, who is further portrayed as a 'villain, which is comparable to the villainous and vengeful wolf in *Le Loup Vengeur*. The use of the possessive adjective 'his' instead of 'its' connotes a mild form of anthropomorphism in relation to how the wolf grabs his victims. This adds additional speciesist discourse to the depiction of the wolf and how the NHA is presented to children who read and actively interpret and form opinions of the characters in this CL, which could potentially be transposed onto their opinions of wolves in the biosphere.

### 4.10.4 Elements specific in French

In French, the author used an interesting expression which is very much locally grounded: "Figure Bolom Loulou". 'Bolom Loulou' is a KM nominal group, inserted in a French expression 'figure', which can be viewed as a form of code mixing. Though the term 'bolom' in KM is context bound and can mean 'old man', as was used for 'Bolom Mustas' (Mustache Guy) in *Sinn Sinn*, it also has a negative connotation in that it is a generic term that can be used to refer to some sort of monster or imaginary scary character that parents use to scare children into good behaviour, a bit like a bogeyman (Carpooran, 2011). In French, the 'wolf', as an NHA, is almost entirely erased and reframed exclusively as a 'bolom', through various reformulations of this term and the relationship between clauses (Rc) and anaphoric references contribute to this process of erasure and reframing. Additionally, the word 'Loulou' means wolf in KM and 'Bolom Loulou' is known in the local cultural context as an evil spirit in the form of a wolf, an evil wolf, werewolf or even shapeshifter of sorts. This is significant in terms of the impact on children's representation of the wolf in relation to their construction of cultural knowledge in Mauritius.

The expression "super gros" (very big/fat) is similar to the KM formulation; in French, 'super' as an adverb is roughly equivalent to 'mari' (very) in KM, and continues to represent an exaggeration of the features of the wolf. In English, the term 'very' is used, which is equivalent to 'bien/extra' in KM and 'très' in French, which would be less exaggerated

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expressions. In relation to these representations of size, the notion of invasion is common to English and French but absent in KM. The terms 'envahit' and 'invade', in French and English respectively, are replaced in KM by the notion of enlargement, which connotes a form of spatial invasion ('koumans grosi' in KM, which translates as 'began to grow'). The wolf is therefore further presented as an invader of space dedicated to human entertainment and this representation is maintained on page 8 (see Appendix X).

Additionally, this exaggeration of size that is noted in KM is visible in the expressions in French "grosses dents, gros yeux, grosses pattes". This latter phrase translates as 'big teeth, big eyes, big paws' which is connotative of the wolf from the tales of *Little Red Riding Hood,* and may be an allusion to 'what big ears you have, what big eyes you have, what big teeth you have' which is a climatic reveal of the wolf dressed as grandma. Though this may not have been the intention of the author, the linguistic patterns reflect a similar portrayal of the wolf, and reinforce my argument that NHA representations are at least partially shaped by culturally constructed understandings of NHAs that have been influenced by exogenous stories.

### *4.10.5  Language nuances*

In this story, where all three languages have been used by the author, the nuances in how participants and events are represented, as well as the framing of the NHAs and humans lead to further questions regarding how the choice of language, and more specifically, how the lexical choices within each of those three languages generate different levels of anthropocentrism and speciesism. One of the issues noted in this particular children's book was that the author appears to have more freedom in presenting the characters and events, notably the wolf, in anthropocentric and speciesist terms. Combining this reflection on how NHAs and discourse associated to NHAs in the Foundation Year Programme (FYP) were treated (see section 1.4.1), I am putting forth the hypothesis that KM has an intrinsic level of anthropocentrism and speciesism associated with it in Mauritius. By this I mean that there is a

level of anthropocentrism and speciesism associated to KM which makes it easier for authors to choose the language to represent NHAs and events anthropocentrically. This hypothesis presents an opportunity for further research, which is discussed in Chapter 8.

### 4.10.6  Dualism in framing the mouse as a hero and the double layers of erasure of the wolf

In the second part of the story, the mouse, which is transformed from the computer mouse to another mildly anthropomorphic NHA character, is framed as a hero (see Appendix X). The heroic mouse arrived after a miraculous transformative event, while the wolf is metaphorically framed as a bug. The wolf, therefore, goes through a twofold process of erasure and reframing as he is not only represented as a monstrous bogeyman, but also reductively framed as a computer bug. This double process of erasure and framing operates in tandem with a dualistic presentation of the human characters versus the 'big bad wolf', which is observable from the beginning of the text. An additional dualism is also visible between the villain who is the 'monstrous bogeyman big bad wolf' causing harm to human computers and the hero who is a 'small but useful' mouse that has been transformed from an equally useful computer part (see Appendix X). In comparison to the previous 8 books analysed, this presents an example of particularly harmful and potentially destructive discourse (Stibbe, 2014) about wolves that could impact on children's learning, especially in terms of how they construct their knowledge of NHAs and nature in relation to technology, computer viruses, and local culture.

### 4.10.7  Framing of humans as an indicator of health and happiness

On page 15, the visual aspect frames the humans as being an indicator of happiness and health of the computer. The illustration is complementary and it shows that everything became normal, and the sky turned blue as a result of the death of the computer-bug-wolf. Happy humans appeared in the computer to wave goodbye to the heroic mouse. The dichotomy here, which reinforces the dualistic representation of NHA and humans, is that the absence of the threatening 'wolf-monster' means that humans can live in peace and happiness.

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### *4.10.8 CL 9 summary and the issue of didacticism*

This book highlights the replication of the usual schema pertaining to the vilification of the wolf. In this story also, the bad character is once again a wolf, who is ferocious, dangerous, monstrous and causes computers to be sick. The element of transmediation is important here, as the artistic choices for the visual representation of the wolf, combined with how the same general framing of the 'big bad wolf' that is common in the collective cognitive capital (Morin, 2008) is invested in the story, potentially allow active meaning-making readers to construct and consolidate their negative representations of the NHA. Such negative representations are encouraged by the twofold process of erasure and reframing of the wolf not only as a monstrous bogeyman, but reduced to a computer bug, and a dualistic presentation of the wolf as an enemy to the human characters and to the heroic mouse.

Though it may be quite a high level concept for children, in this story the issue of didacticism appears to revolve loosely around the consequences of buying pirated material as it was the case of a pirated game, specified early on in the story, that caused trouble for the human protagonists and led to the manifestation of the computer-bug-wolf. This is an extra level of implicit textual didacticism, in the sense that the story is also discouraging pirating. It is a didactic element to the story that could be difficult for children to grasp on their own, exacerbated by the abovementioned dualism and two-fold processes of erasure and framing. This story in particular foregrounds the need for writers to engage in more reflection on the didactic aspect of CL, especially in relation to ecologically responsible language and discourse in the Mauritian context.

## 4.11 CHAPTER 4 SUMMARY: A MODEL FOR CHILDREN'S LITERATURE WITHIN THE BIOSPHERE

One of the significant findings across the representations of NHAs in the nine children's books is the divide between the biosphere and the anthroposphere; the biosphere is considered as a separate entity from the human. For example, in some cases, like *Sinn Sinn*, the environment is 'out there' to be exploited by humans in the form of agriculture with gardens and plants as 'property' of the owners. The point of entry to the analysis and interpretation of the CL was a model I constructed as a result of my theoretical reflections (see Figure 4 below). The model initially appeared as part of my reflections in Chapter 2 (see Figure 4) and it presents a condensation of the recurrent themes that have emerged from the analysis. I will present a synthesis of the main findings with respect to RQ1 by taking the model as an anchor point for my reflections. By taking into consideration the organisation of the model, I identified different 'constellations' as synthesised groups, which crystallise part of the main findings in regard to Research Question 1.

**Figure 4**

*Model of children's literature within the biosphere*
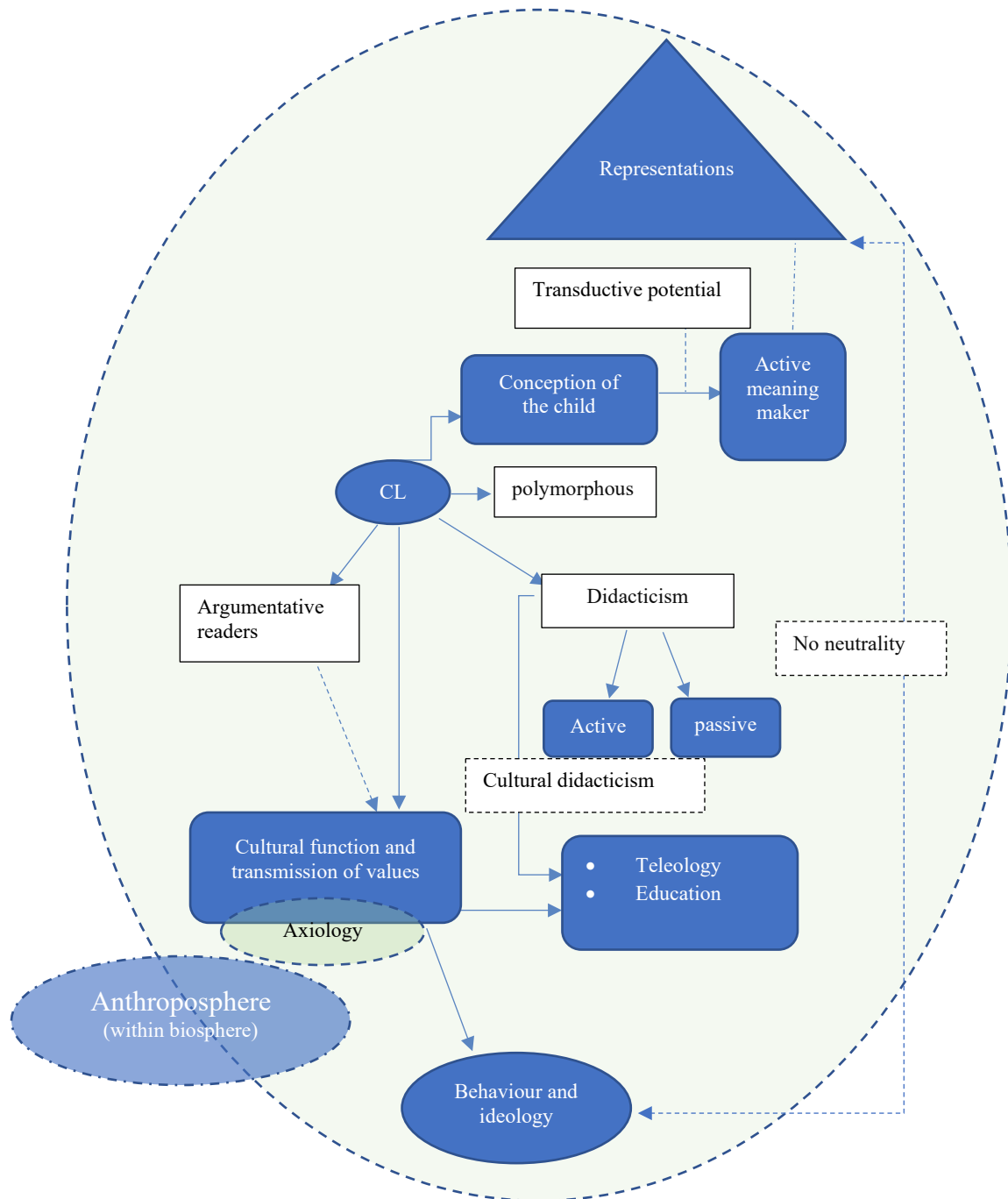
### 4.11.1 Constellation 1: Multilevel dualism and disarticulations between the anthroposphere and the biosphere

The first constellation synthesises the fundamentally disjunctive ways in which NHAs are represented in CL. This is significant as it demonstrates that the anthroposphere is not considered as being part of or within the biosphere. Humans and the human realms are presented as being separate from the NHA and realms of nature. I have identified different sub-groups regarding the levels of disarticulations which are enumerated below:

i)   *The salience paradox*: The concept of salience undergoes a semantic alteration, which becomes paradoxical. Across many of the CL books analysed, *Horrible Bear, Trois Petits Lapins Gourmands* and *The Tale of Peter Rabbit*, for example, the conferment of anthropomorphic traits to the NHA characters leads to an interrogation of the foundations of the notion of salience. The higher the degree of anthropomorphism, which is human centred in a default-anthropocentric way, the lower the degree of salience for actual real-life NHA. This paradoxical nature of salience led me to conceptualise dualism in terms of social dualism and ontological dualism, which subsequently led to the modelisation of dualism in terms of a continuum.

ii)  *Social and ontological dualism*: Ontological dualism involves NHA characters that have low degrees of anthropomorphism and simultaneously have more animalistic traits; some examples are the zebra in *Greedy Zebra* and the wolf in *Le Loup Vengeur*. The lower the degree of anthropomorphism is combined with the lower degree of salience, yet the higher the level of human antagonism/dualism, and the higher the freedom for the author to represent the NHA characters in a pejorative sense. The antagonism can be ontological, in the case of *The Tale of Peter Rabbit* where there is a form of predatory behaviour from the human towards the rabbit as Mr McGregor wants

to catch and eat Peter. Social dualism implies highly anthropomorphic NHA characters, like the case of the bear in *Horrible Bear* and the mole in *Trois Petits Lapins Gourmands*. The degree of antagonism or dualism with humans is lower, and there is less freedom for the author to use pejorative constructions as the NHAs are represented more as metaphoric or symbolic humans. In this sense, the opposition is not ontological but more social.

iii) *CL/text embedded dualism continuum*: From the reflections pertaining to dualism, a continuum was proposed to categorise books in terms of the dualistic depictions discussed above. Figure 9 below takes from Figure 8 and applies the continuum to categorise the sample of nine CL used for this study. Orange is used for the storybooks in English, yellow for French, and green for Kreol.

**Figure 9**

*Categorisation of sample CL using the 'Continuum for social and ontological dualism'*
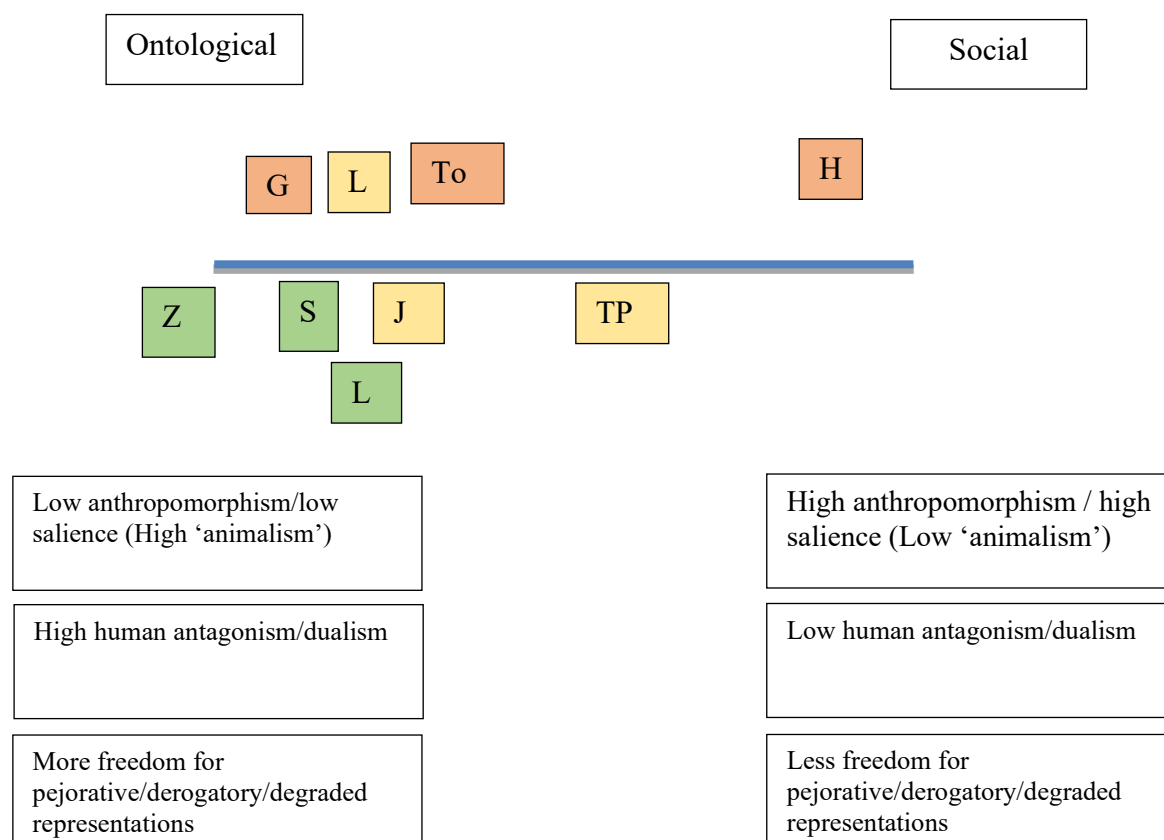
iv) *Instrumentalised anthropomorphism*: The concept of anthropomorphism appears to be instrumentalised for purposes beyond didacticism. Instrumentalised anthropomorphism can be functionally likened to utilitaristic anthropocentrism (Fill & Mühlhäusler, 2001) as both accomplish similar purposes. The socially dualistic (see points ii and iii above) depictions of characters in *Horrible Bear*, for example, also appear to use high levels of anthropomorphism to transmit information regarding the human dominant power relationships with NHAs. This normalised power relationship is visible for other stories like *The Tale of Peter Rabbit*, *Sinn Sinn*, with an added layer of capitalist-driven land exploitation.

This power relation between humans and NHAs can also be observed in the way anthropomorphism is instrumentalised as a device for the disregard and/or mistreatment of NHAs; this is particularly concerning in two ways as (1) a form of potentially destructive discourse (Stibbe, 2014) towards NHAs in real-life, and (2) as carrying implicit didacticism in relation to how we treat others. The latter concern can also be divided into two further points in terms of how we treat other species, with NHAs representing part of that group, but also how we treat other people, if we consider the NHAs as representative of the metaphorical or symbolic human (Burke & Copenhaver, 2004; Huggan & Tiffin, 2010; Tüür & Tønnessen, 2014). For example, in *Horrible Bear*, the action of the girl standing on a bear's belly was normalised, as was the case with the girl stomping directly over the squirrel who was lying in front of the human character, with its hands on its head in a protective position (see Appendix P).

v) *Voluntarist anthropocentrism*: This is an emerging theme relating to the story *Joyeux Noel*, where the dog, at the end, is happily owned and defined from the exclusive perspective of being a pet, owned by a human. Here, anthropocentrism is framed as a

'good thing' and leads the reader to infer that 'it is ok', and even desirable, from the perspective of the pet to be owned by a human.

vi) *Factual speciesism*: This theme emerged from the analysis of *Zistwar Mustik,* which was the only story which featured an NHA, the mosquito, in non-anthropomorphic terms. Though factually accurate in many ways, with a very strong didactic element throughout the story, the speciesist discourse frames the insect exclusively as a nuisance to humans.

### 4.11.2 *Constellation 2: Ideology, representations, and didacticism*

The second constellation synthesises how ideology is predominant in the representations of NHAs in CL and the relationship with didacticism. I have identified different sub-groups oriented around the didactic component, which are enumerated below:

i) *Didacticism*: All stories have different levels of active as well as passive didacticism. The prevalent type of didacticism, however, is passive, notably in terms of cultural didacticism. In *The Tale of Peter Rabbit*, for example, the element of didacticism is present mostly through the establishment of causality relationships between warning and action and on projected good behaviour by the non-naughty rabbits. Peter, as the main protagonist, represented the character who was naughty, did not heed his mother's advice and ended up being in trouble as a consequence of not listening to the adult. Moreover, ideology and power relationships are often intermeshed with the story, and demonstrate that anthropomorphism is not necessarily a means to erase anthropocentric ideology from the presentation of NHA characters.

ii) *Axiology and didacticism*: Values appear to be transversal to most of the stories, except *Zistwar Mustik*, which has an active and rational didactic streak to raise awareness in relation to staying safe against mosquito bites. The other CL books feature different

values and the moral element of the stories reinforces the transmission of these values, such as in the story of *Le Loup Vengeur*. Ethics also form part of the didactic dimension of some stories, like *Le Bogue*, which is about the consequences of the purchase of pirated material.

iii) *Transmediation*: Transmediation is another aspect central to the transmission of didactic, representational, and ideological information in the CL. Linguistic and pictorial information intermesh in constructing the specificities of the NHA characters. For example, the zebra in *Greedy Zebra* is often depicted as eating too much and being fat and greedy in various situations.

### 4.11.3 *Constellation 3: Permeation of the capitalistic logic*

The presence of the capitalistic logic (Bang & Door, 2007) in some of the CL reinforces the divide between the anthroposphere and the biosphere. This nuanced form of logic influenced by capitalism was evident in *The Tale of Peter Rabbit*, *Horrible Bear*, *Greedy Zebra*, and *Sinn Sinn*. The characters were either represented as pests, nuisances, NHAs that were fit for consumption, or NHAs that required the anthropomorphic trait of wearing clothes. Three of the stories involved human and NHA interaction, and this is significant with respect to implicit, passive didacticism as it conveys the anthropocentric capitalist mode of functioning that is prevalent in today's world.

These three constellations represent the possible points of reflection that would be useful to teachers, trainee-teachers, textbook writers, and even parents when choosing ecologically responsible CL for children. The following chapter presents the findings and discussions in relation to Data Set 2, curriculum materials, which are provided as prescribed resources to teachers in primary school; teachers do not have the same level of volition in relation to curriculum materials and textbooks that they would for choices in relation to CL

books. In relation to these issues, the following chapter discusses the ways NHAs are represented in language curriculum textbooks for Grades 1 and 2 in Mauritius.

# CHAPTER 5 – FINDINGS AND DISCUSSION

## Data Set 2: Curriculum Materials

## 5 INTRODUCTION AND OVERVIEW

Building from the eco-critical discourse analysis (ECDA) of children's literature in the previous chapter, Chapter 5 focuses on textbook analysis, as the second data set within the text analysis method. Data Set 2 comprises language curriculum textbooks which are provided as prescribed resources primary school level; teachers do not have the same level of volition with regard to these materials curriculum materials and textbooks compared to the freedom of choice that they have in relation to CL books. The ecologically responsible activities and discourse that the teacher can provide from these prescribed textbooks require further consideration in terms of how to use the content to ensure the learning objectives of a lesson are achieved whilst concurrently developing children's ecological awareness, knowledge of the biosphere, and beneficial discourse (Stibbe, 2014).

Twelve Grades 1 and 2 English (ENG), French (FR) and Kreol Morisien (KM) textbooks were analysed. The initial coding grids can be referred to in Appendices Y to AA for the three languages. Language textbooks in Mauritius make significant use of stories which are potential indicators of ideological discourse, as demonstrated by previous research (Oozeerally and Hookoomsing, 2017). Elements of CL often appear in local language textbooks as support texts to respond to didactic needs (Sharp, 2011) and are thus important vectors for the construction of NHA representations. As discussed in the methodology presented in Chapter 3, it is those elements of CL in terms of short story, rhyme, poem or literacy-based activity that have been selected from the twelve textbooks for ECDA.

In this chapter, data is presented and analysed by subject; the English textbooks are presented first, followed by French and then Kreol Morisien. The reason for this structure is due to the dominance of English and French as core subjects in the Mauritian education system, with English also being the medium of instruction, and KM offered at primary as an optional language. Beyond this, I consider each textbook as a discursive ecosystem. The discursive, linguistic and cultural elements are intermeshed in each language textbook in such a way that they give each textbook its unique specificity that requires discrete and thorough consideration.

Though there may be recurrent themes, they have not been grouped together because this would dilute the nuances in the representations. For example, a theme that appears in English cannot be juxtaposed to the same theme appearing in KM or French, as the multilingual and multicultural dynamics of the Mauritian context influences the way each theme is presented and interpreted in the different languages. Hence, context is not just reduced to 'the background of the study'; instead, the local sociolinguistic context is constitutive of the themes that have been identified in the textbooks. Framed in this way, context is therefore intrinsic to the cultural cognitive capital (Morin, 2007), the methodology adopted and the ecolinguistic paradigm which is transversal to the study.

Additionally, the extended accounts gathering episode of one participant is presented in this chapter (see section 5.11) and not alongside the findings and discussions for Data Set 4 in Chapter 7. The reason for this is because the participant had expressed interest to extend the accounts gathering discussions alone, outside of the group situation, and wanted to share more details specifically about textbook writing for KM and NHA representations in relation to a short CL text that the participant had written. Given the specific focus of this particular accounts gathering episode and how it sheds further light for interpretation of the KM textbook story and for the purpose of ECDA of that text, the findings and discussion of that data collection has been included in this chapter on curriculum materials, for Data Set 2.

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## 5.1 SUMMARY OF KEY THEMES

Chapter 5 presents the findings and discussions of Data Set 2 for the textbooks and curriculum materials of the Grades 1 and 2 English, French and Kreol Morisien textbooks used at primary level in Mauritius. The key themes which emerged from this data set, responding to Research Question 2 of this study, are enumerated in the sub-sections below. In terms of linguistic analysis, the linguistic patterns through which ideology is manifested are included in the textbook coding grids in Appendices Y, Z and AA; they are noted in abbreviations based on Stibbe's (2015) list as presented in Figure 6 in Chapter 3.

### 5.1.1 *Explicit didactic subordination of texts*

The texts in the Grades 1 and 2 language textbooks (ENG, FR, and KM) are always geared towards an explicitly didactic dimension. The lesson's curriculum objectives supersede the textual context as the latter must cater for the objective to be achieved. Consequently, the texts are either 'invented' by the writers, which was the case for many of the texts used for the learning of sounds and phonics, or adapted by the writers, like the story of '7 Frer Tang' in KM, to suit the objectives in question. As a result, the didactic streak running through the texts is mostly subordinated to or subsumed within the curricular objectives which orient the choice or conceptions of the texts in the first place. In this sense, biospheric knowledge, in whichever form it takes, serves an explicit didactic purpose.

The accounts gathering episode with one of the textbook writers of KM also confirms this as the participant stated that the choice of '7 Frer Tang' was largely motivated by the curriculum objectives of encouraging learners to develop understanding of colours and naming days of the week; the choice to do that through a story to develop children's literacy skills was, in some ways, secondary to the curriculum objectives. This specificity of the CL related texts

in textbooks sets them apart, especially when compared to CL, where the story translates the intentions and representations of the author, which are not primarily didactic.

### 5.1.2   Exogeneous stories as a vehicle of ideological discourse

Apart from the invented texts, which often catered for phonological objectives, most of the texts in the three languages are inspired from, based on, or adapted from exogeneous stories. This highlights the scarcity of autochthonous stories and simultaneously implies the transposition of representations and cultural elements, encapsulated within the original texts, to the textbooks concerns. This corroborates with research done in the local context (Oozeerally & Hookoomsing, 2017) which demonstrated that textbooks from the pre educational reform period also included exogeneous stories which transmitted ideological discourses on NHAs. The exogeneous stories analysed in this doctoral study also replicate the same tendencies, notably in regard to the wolf, which is a vilified NHA. Moreover, the same patterns that occurred in CL for Data Set 1 have been observed in the stories and texts used in the Grades 1 and 2 language textbooks, which can be partly explained by the stories and texts themselves often being extracts from CL (see section 5.12 for examples).

### 5.1.3   Ego-anthropocentrism

An interesting point that emerged from the analysis of a text in the English Grade 1 part 2 textbook is the emergence of the concept of ego-anthropocentrism, which is a term that I have coined and which was subsequently observable in French and KM textbooks; it is also observable in Data Set 3 for the interviews with children and is discussed further in the next chapter.  The notion of ego-anthropocentrism is an emerging theoretical construct where I am merging anthropocentrism and egocentrism and more specifically the egocentric phase of psychological development which characterises children's linguistic and social behaviour (Piaget, 1962). Ego-anthropocentrism is thus a form of anthropocentrism that emanates not primarily from adult discourse and acquired cultural knowledge, but because of the child's

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egocentric developmental stage (Vygotsky, Piaget). I argue that ego-anthropocentrism can be considered as a sub-category of default anthropocentrism, specific to the child. My findings demonstrate that children exhibited two types of distinct anthropocentrism: the first one is a form of replication of adult discourse (such as horses 'making [us] win'; lizards are bad') where it is evident that the discourse of the child is influenced by that of adults in their immediate vicinity. The second type is ego-anthropocentrism where the child exhibits a more 'independent', egocentric discourse, often pertaining to subjective and personal likes and appreciation, of certain specific NHAs. For example, Data Set 3 presents instances of children who liked giraffes because 'they have long necks' and children who disliked giraffes for this same reason. This type of anthropocentrism is not necessarily a replication of adult discourse in the immediate vicinity, but may be the result of the child's subjective interactions as an active meaning-maker with the NHAs, through different forms of media and lived-experience. This reinforces my postulate that children construct their own *expérienciations* (Robillard, 2008) based on their egocentric development, and this is one of the reasons why it is fundamental to choose carefully how material is being presented in textbooks, in relation to NHAs, nature, and ecological responsibility.

### *5.1.4 The presence of pets*

The presence of pets is notable in all the textbooks. Beyond providing an 'experiential' way of conceptualising and relating to NHAS, pets are also framed as being in subordination to humans. In the CL big book related to the English Grade 1 Part 2 textbook, NHAs are reformulated and framed as pets for human ownership; though the element of companionship is also present, the term 'pet' is connotative of the instrumentalised power relations between NHAs and humans and is thus regarded as anthropocentric. The story of Ben, who is reflecting on which pet he wants as his birthday gift is an example that encompasses capitalist discourse in terms of the purchase of an 'NHA-object' in view of 'owning' it; this discourse is pervasive

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in other forms of data as well. This contributes to the reader's construction of NHAs in the biosphere as being suitable 'objects' to request as gifts.

This representation of pets as 'gifts' is a common reality, but the story lacks a didactic element to explain that such behaviour can often lead to pets being sadly abandoned by children and families after the initial pleasant experiences have worn out, as people do not give enough consideration to the responsibilities of caring for an NHA. In terms of ecologically responsible discourse, the text could instead briefly touch upon pets as lifelong companions and not short term possessions, and possibly also encourage the reader to develop a preference for adopting an NHA from a rescue organisation rather than buying from a breeder. This didactic representation could potentially contribute to shifting knowledge constructions in the local cultural context as Mauritius has a high number of stray dogs, low numbers of sterilised pets, and several NGOs trying to raise awareness about how to care for companion NHAs.

### 5.1.5   *Dualism normalisation of anthropocentrism*

Dualism is also present throughout the textbooks. Presenting NHAs as pets to be 'bought' and subordinated to the human is not only dualistic in nature but also encompasses anthropocentric discourse. However, most of the elements pertaining to this discourse are inferred. The examples from the Kreol Morisien textbooks are particularly pertinent as the anthropocentrism is tightly meshed with capitalism and capitalist discourse. For example, in one of the texts for KM Grade 1 Volume 2, the possession of an ox and a cart is directly based on the capitalistic logic (Bang & Door, 2007) of possession, interwoven into the local cultural context at a time when the 'exploitation' of land in the form of sugarcane cultivation was the main source of revenue for Mauritian families.

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### 5.1.6   Transmediation

In contrast to Data Set1 for CL, where transmediation was noted but did not necessarily have an explicit didactic purpose, transmediation is central in the textbooks for Data Set 2, as the texts are systematically accompanied by illustration, with a focus on visual information decoding and inferences, for example. The illustrations are therefore central in how the reader and primary school learner, as an active meaning maker, complements information interpretation from the written text and the visual aspect.

In summary, the knowledge of the biosphere is mediated by several aspects transmitted by discourse, notably ideological discourse. In the textbooks analysed, the explicit didactic component threaded through the curriculum materials is such that any biospheric knowledge is subordinated to the curricular objectives; biospheric knowledge therefore serves a curricular purpose. As a directly related point, the significant presence of exogeneous stories in language textbooks is a major contributing factor in how ideological discourse, notably anthropocentrism, speciesism and capitalism, find their way in curricular material that children use. This is an important aspect in the presentation of and construction of biospheric knowledge, notably about and in relation to NHAs; it is also significant in relation to proposing a model for more ecologically responsible discourse and activities for curriculum development practices and teacher-training in Mauritius.

Such knowledge remains disarticulated with anthropospheric knowledge, as discussed above. This is condensed by the normalisation of dualism, and therefore anthropocentrism, which reinforces the biosphere-anthroposphere divide. However, emerging elements regarding ego-anthropocentrism shed light on how knowledge about the biosphere, particularly NHAs, is reinvested by children to construct their own interpretations of the biosphere. Nevertheless, it remains a finding that adult discourse and media, as well as the process of transmediation, impact upon this process of knowledge construction. This reinforces my argument that it is

fundamental for adults as well as curriculum developers to develop biospheric knowledge and ecological sensitivity as their discourse has the capacity to shape the objects of reference and influence behaviour and action towards them in profound ways (Foucault, cited in Stibbe, 2015). The sections below now detail the instances of NHA representations in the curriculum materials for English, French, and Kreol Morisien. Some are presented in table form to show the similar patterns, while other instances that are particularly relevant to the study are discussed in further elaborated upon.

## 5.2 ENGLISH GRADE 1 PART 1

All the texts with NHA representations that have been analysed in this textbook are focused on learning the pronunciation of specific sounds, with a focus on phonics, as there were no specific CL elements. The predominant forms of NHA representation which appear are in the form of salience and individualisation through the anthropomorphic traits ascribed to the NHAs. In relation to Research Question 3 and 4, this indicates that NHAs are given some significance in curriculum materials aimed at children, particularly young children, and that a variety of selected NHAs can be used for didactic purposes regardless of the presence of the species in the local cultural context. It also reveals that NHA representations are implicitly transmitted to children through activities that may not initially appear to be linked to learning about the biosphere, as that may not be the intention of the activities. The four examples (see Appendix CC) for this in the English Grade 1 Part 1 textbook are listed below:

**Table 6**

*NHA representations in English Grade 1 Part 1 textbook*

| Page | Activity description | NHA representation and ECDA |
|---|---|---|
| 46 | The aim of the text is to draw learners' attention to the sound [f]. | The fox is mildly anthropomorphic in the sense that it is able to speak and use |

| | It portrays a fox watching the skeleton of a fish. | the adjective 'fantastic' to qualify a fish. |
|---|---|---|
| 49 | Features a snake singing a song. The focus of the text is to bring the learner to learn the sound [s]. | The anthropomorphic aspect associated to the snake, in this case, is the ability to sing, complemented by the use of the pronoun 'I'. |
| | | Besides, the sentence "…I can sing a song …" represents the participation of the snake in activities traditionally attributed to the human. As a consequence of the anthropomorphic trait, the snake is given salience as it 'stands out' as being an individual (individualisation) having the capacity to sing. |
| 89 | The aim of the text is to get learners to look for words starting with [k] and help the kitty. The kitty is pictured as being helpless and in need of the help of learners. | The kitty here is framed as being interested to learn, which represents the transposition of an anthropomorphic trait onto the NHA. As it is the case for the snake, the anthropomorphism attributed to the kitty is a form of individualisation as s/he is shown as an individual involved in learning. However, and somewhat paradoxically, there is also a form of passivation in the sense that learners are required to help the cat, which is unable to carry on his/her own. |
| 123 | The aim is to help learners with words starting with 'e'. Two elephants named Elly and Eddy are | It encapsulates a form of anthropocentrism via the transposition of a dietary practice to that of |

| featured as having eggs as part of their breakfast. | elephants. The fact that they have names is a form of salience through individualisation. The vocabulary used, as well as the relationship between words and the presentation of the event point towards an anthropocentric ideology. |

## 5.3    ENGLISH GRADE 1 PART 2

As was the case for English Grade 1 Part 1, Part 2 (see Appendix DD) of the English textbook also focuses on phonics, which is in line with the curriculum and syllabus regarding this level. The activities highlight that salience is often given to the NHA representations, and though there is generally low anthropomorphism of the NHAs, it can at times appear in connection with a form of instrumentalised anthropomorphism in relation to power dynamics between humans and NHAs. The notion of 'ego-anthropocentrism' appears in relation to this textbook and is an emerging theoretical construct; I am merging anthropocentrism (as a human-ideology) and egocentrism, more specifically the egocentric phase of psychological development which characterises children's linguistic and social behaviour (Piaget, 1962). It appears to be an emergent construct not only in how texts are encoded by children, as is the case in an example listed below, for the character of Emilie who wrote a poem, but also how the information from the interviews with children (see Chapter 6) converge around a form of children-specific anthropocentrism, which I am coining as the term ego-anthropocentrism.

This tendency towards ego-anthropocentrism in the NHA representations contained in this textbook are subjectively evaluated by and grounded in a default anthropocentric perspective. Examples of this are listed below:

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- On page 35, the aim of the text is focused on learning the [o] sound and the visual aspect features an ox standing on a table. The use of the pronoun 'he', instead of it, is mildly anthropomorphic in nature and concomitantly gives salience to the ox through individualisation.

- Page 96 features a poem which is based on a child's love for NHAs. The child is Emilie who is 5 years old, and acknowledged as the author of the poem. The use of adjectives in the poem serve to illustrate the differing traits of NHAs, as interpreted by Emilie; 'cute', 'nice', 'not so beautiful', 'fierce' also represent evaluation patterns that are subjectively anchored in her default ego-anthropocentric perspective. The anthropocentrism here is present in how the NHAs are always helping Emilie and their purpose is being articulated around her. The ego-anthropocentrism is notable through the presence of 'me' (referring to the author). The last segment of the poem also establishes a causality relationship between the 'usefulness' of the NHAs and that the author keeps them healthy and happy because they are very helpful.

The NHAs are given salience through individualisation of their names. There is also the element of activation as all the NHAs mentioned in the poem have an active role to play in line with their respective yet distinct purposes. However, the activation in question is foregrounded through their actions directed towards the benefit of the human character. In terms of active-meaning making and construction of representations, the general framing transversal through this story is anthropocentric in that NHAs are helpful and useful to humans, and are therefore worthy to be kept happy and healthy. This heavily utilitarian presentation of NHAs coincides with a low anthropomorphic presentation. In the illustration of the poem, none of the NHAs have anthropomorphic traits, and none are able to speak or communicate. On the contrary, the poem features NHAs in their 'natural' state with no characterisation as the focus

is on Emily and how she relates to the NHAs, with a utilitarian, ego-anthropocentric perspective. In developing an understanding of the biosphere, this could lead the active meaning-making child to construct similar representations of NHAs in terms of their usefulness or helpfulness to humans.

The activity on page 97 refers to a big book written as support material. The text is relevant to this study as it reinforces the concept of ego-anthropocentrism. The story, in itself, is anthropocentrically titled *Choosing a Pet for Ben*. NHAs are reformulated and framed as pets, subordinated to and for the provision of companionship to humans. The story features a boy, Ben, who is discussing with his parents which pet he wants for his birthday gift. None of the NHAs depicted are anthropomorphic; like the poem written by Emilie, this story also has no characterisation of the NHAs. Moreover, they do not have salience as they are presented as 'interchangeable' members of a particular species and 'serving as pets'. Further examples of ego-anthropocentrism and framing of NHAs as pets are listed below:

- On pages 8 to 9, Ben wants a "big gorilla…to protect me [him]".

- On page 11, the mother replies that gorillas are wild NHAs that live in the jungle, thus foregrounding a particular form of framing.

- On pages 14 to 15, Ben wants "a fast horse for me [him] to ride". As it was with the gorilla who was presented in an ego-anthropocentric way, the horse is also presented similarly but with a different function as a mode of transport. The active reader is therefore constructing an understanding that Ben desires pets which have a utilitarian value to him. In this sense, it can be argued that there is a double layer of anthropocentrism; above the semantic layer of 'pets' being an anthropocentric term and concept, the element of utilitarian ego-anthropocentrism represents a second layer which adds on to the first.

Page 121 features a short text to get learners acquainted with the [ʃ] sound. It features a visually mean and menacing looking shark near the shore; the shape and positioning of the eyebrows that create the threatening expression are the only anthropomorphic element associated with the shark. For this activity, the text uses the sentence "Hide behind the bush" as an injunction based on the assumption that sharks are always dangerous and reinforces the implicit evaluation that sharks are bad, harmful, dangerous and a threat to humans, who must 'hide' as soon as their presence is detected. In terms of constructing knowledge of the biosphere about sharks, and potentially sharks in the seawaters of Mauritius, this brings the reader to infer that the shark is primarily a dangerous NHA.

## 5.4    ENGLISH GRADE 2 PART 1

There was only one example of NHA representations linked to the CL dimension in this textbook (see Appendix EE). The text and activities which included the NHAs were also focused on phonics and the learning of sounds. For example, the aim of the activity on page 67 is to acquaint students with the following sounds: 'd', 'e', 'f' and the illustration features three NHAs, namely a dinosaur, a giraffe and an elephant where each of them has a distinct quality. The dinosaur is mildly anthropomorphic owing to the facial expression. It also however appears to be based on the Tekken video-game character, Gon, which can partially explain the anthropomorphism, contrasted with the giraffe and the elephant who have no anthropomorphic traits.

The first textual indicators point to mild anthropomorphism in the sense that the NHAs are recognised by the pronoun 'he' instead of 'it'.  Secondly, the anthropomorphic actions undertaken by the three NHAs are centred around human practices of dancing, drumming, and painting eggs, which is a form of anthropocentric representation.  In terms of didacticism, this shows that there is an ideological perspective being foregrounded in the text to show NHAs as

participating in human cultural activities, thereby contributing to the reader's construction of knowledge about NHAs, culture, and the biosphere.

## 5.5   ENGLISH GRADE 2 PART 2

There were only two examples of NHA representations linked to the CL dimension in this textbook (see Appendix FF). On page 27, the reading comprehension text portrays NHAs as gifts to humans, which was also noted in section 5.2 above. There is therefore a form of commodification of the NHAs, notably through the semantics of the implicit concept of 'pet', which is anthropocentrically defined. The NHA is therefore subordinated to and dependent on the human, as demonstrated in the subsequent segments where the parents are evoking the need for the child to take care of the rabbit. The modal 'must' illustrates how important it is for Molly to take care of the rabbit. The rabbit, despite a 'default' form of foregrounding, undergoes a process of passivation. Default foregrounding refers to the fact that the rabbit is the only NHA in the text and is the object of the text; there is no deliberate foregrounding on the part of the author. Coming back to the issue of passivation, the rabbit is depicted as a silent, motionless organism looking in a single direction. This passivation of rabbits is replicated in the French Grade 2 textbook (see section 5.8 below).

This subordinated anthropocentric definition and relationship between NHAs and humans is replicated on the text on page 44, which features a cat having found a home. "We now have a pet and we are happy" demonstrates a consequential relationship between having a cat and being happy. The cat is also given salience through individualisation via the conferment of a proper name "Bloo". In both this text and the one on page 27, the NHAs are framed as pets subordinate to humans and as sources of happiness to their human owners. This is significant to the research questions of this study as there are no instances where the NHAs are considered as autonomous members of the ecosystem, having an existence of their own.

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Through such representations which erase the autonomous nature of the NHA as a member of the ecosystem, there is the creation of another layer of utilitarianism in the 'emotional' dimension. NHAs are framed as pets who are 'useful' for human comfort and this is not necessarily a bad thing because it is not a negative discourse; this type of discourse and representation establishes a sense of emotional bonding and attachment with the NHAs as a constitutive member of the family unit. The NHA is given a salient presence and an element of emotional attachment for humans which is important when thinking of ecologically responsible activities and discourse that represent the intrinsic value and importance of NHAs as autonomous members of an ecosystem, and of the biosphere in the broader sense. For example, children's construction of knowledge about NHAs as well as their subsequent interactions with and reactions to NHAs could be influenced by the distinction made to represent them as companions with autonomous emotions and behaviours, instead of pets in the utilitarian sense. There are currently no instances of NHAs being foregrounded in this way in the English Grade 1 textbook, for example, and this highlights the necessity for reflections on ecological representations and discourse in the conceptualisation phase when developing textbooks and curriculum materials.

## 5.6 FRENCH GRADE 1 PART 1

Texts related to NHA representations present in this Grade 1 French book are mostly geared towards the learning of sounds (see Appendix GG). As is the case with the previous textbook in English, all NHAs are shown as anthropomorphic individuals foregrounded in their involvement in their respective activities. There is also the element of activation, for example, the depiction of a giraffe reading and a mouse playing the piano. However, even though the NHAs are given salience in images, the textual structures point towards a form of reduction to the comical, which neutralises any intended form of salience given. The examples of salience and framing of NHA representations are listed below:

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**Table 7**

*NHA representations in French Grade 1 Part 1 textbook*

| Page | Activity description | NHA representation and ECDA |
|---|---|---|
| 43 | The main purpose of the text is to help the learner to learn the sound [t]. The semantics in this case appear to be secondary. | The phrase "est sur une moto" [is on a motorcycle], combined with the visual dimension, where the tortoise is shown to be riding a motorcycle transporting vegetables and sporting a smile, represents an anthropomorphic framing of the tortoise. The anthropomorphic traits are present via the facial features and mostly through the accomplishment of this set of actions. Consequently, the tortoise is given salience through individualisation and activation. |
| 63 | The main purpose of the text is to encourage the learner to learn the sound [d]. The text features a dinosaur, a panda, a dolphin and a dodo, on a theatre scene. The dinosaur and the panda are pulling the curtains while the dodo and the dolphin are playing dominoes. | The images are symmetrical to the textual indicators representing an anthropomorphic framing of all the NHAs as participating in human activities. As a function of their anthropomorphic traits, all the NHAs are given a certain level of salience, notably through individualisation, activation and foregrounding. |
| 71 | The main purpose of the text is to help the learner to learn the sound [i]. The text features a giraffe reading a book and a mouse playing a piano. | The textual indicators point to the same type of anthropocentric ideology noted in the points above. The anthropomorphism is action-driven; there is an underlying assumption that NHAs who are shown to read or play an instrument are funny and comical, leading to a mildly pejorative, clumsy framing. The adjectives "rigolo" |

## 5.7  FRENCH GRADE 1 PART 2

The Part 2 textbook for Grade 1 French provides additional examples of similar representations (see Appendix HH). Though the themes are recurrent, and the types of representations in the curriculum materials are similar, they are presented in detail to emphasise the pertinence of the representations and the associated language issues. By detailing the examples, the ideological issues, representations, and discourse are foregrounded as posing significant instances of how the didacticism intrinsic to school textbooks establishes these materials as considerable conveyors of implicit knowledge about the biosphere and NHAs. Therefore, the need for careful reflection on ecologically responsible discourse and activities related to NHAs and the environment is further consolidated; the aim of this study and Research Question 5 become increasingly pertinent.   The examples of ideology, framing, and salience are listed below:

- On page 9, the main purpose of the text is to help the learner to learn the sound [s]. The text features a grasshopper, a mouse and a snake, the latter two having proper names. The NHAs are mildly anthropomorphic. The grasshopper has a bipedal posture and is dancing (despite being displayed with six legs). The degree of apparent anthropomorphism is relatively low compared to the other texts analysed so far for previous textbooks and there are no clear visual and textual indicators that attribute human characteristics to the NHAs. The NHAs are given salience through their mild anthropomorphic traits related to performing human-like actions, individualisation and activation.

- On page 17, the text features a calf drinking water, a bull playing with a tomato and a dodo in a boat. The anthropomorphic traits of the NHAs here are unclear, but despite the relatively low anthropomorphic indicators, the NHAs are given a certain level of salience through individualisation as individuals involved in their respective activities, activation as the dodo is shown to be on the boat, while the calf is drinking water and foregrounding.

- On page 42, the text features two rabbits in front of lettuce plants, with a school in the background. There is an underlying mildly speciesist discourse running through this text with respect to the textual and visual indicators; this corresponds to the framing of the rabbits as passive NHAs who only need food and only focus on eating, and the texts infer that this is a funny trait (see Appendix HH). Schooling, as a recurring event for rabbits, is reduced to the provision of food as the only essential element for the NHAs. No anthropomorphism is noted and the rabbits are shown to be sitting and looking at the lettuce, with the school in the background. The absence of anthropomorphism also coincides with the lack of salience; the rabbits are homogenised, as they have the same form and exactly the same posture. This presents a paradoxical foregrounding of the NHAs because the rabbits are foregrounded in a way that specifically highlights their passivity, whereas foregrounding is usually applied to give saliences which implies activation and not passivation.

## 5.8  FRENCH GRADE 2 PART 1

In the Grade 2 French textbooks, the progression of learning objectives reorients the texts chosen and textual content becomes slightly more meaningful, even though the examples of NHA representations that appear in the books are still subsumed within broader curricular learning objectives, such as the learning of grammatical structures. In contrast, the texts in the

Grade 1 French textbooks were more focused on the learning of sounds. The examples from the Grade 2 Part 1 French textbook (see Appendix II) are detailed below to underline the significance of the  NHA representations in relation to children's active meaning-making, thus showing how such constructions of knowledge about the biosphere, NHAs, and connections with the natural world are potentially influenced by the overt or implicit didacticism.

- On page 29, under the rubric , "Je découvre la grammaire" (I discover grammar), the main purpose of the text is to introduce grammatical structures of sentences. The text is inspired by a nursery rhyme ("Promenons-nous dans le bois, pendant que le loup n'y est pas", which is translated as 'Let's take a walk in the woods, while the wolf is not there'). The text replicates the speciesist ideology of the original rhyme through a set of assumptions indicating that the wolf is an intrinsically dangerous NHA, framing it as a form of antagonistic character (as noted in Chapter 4). Punctuation also serves to reinforce this framing; the exclamation mark acts as a warning (see Appendix II), for both the human story characters to run, and the reader who is encouraged to develop an understanding of the wolf as dangerous, reinforcing the vilification of the NHA. It is inferred that it is safe to stroll through the woods if the wolf is not there. The connector 'tandis' establishes a consequential link between the first and second sentence. The question in the third line consolidates the causality links, aiming to verify the presence of the wolf and evaluate the safety of the stroll. The wolf is given mild anthropomorphic traits such as brushing his teeth.

- On page 110, under the rubrics "Je raconte la scene"  and  "Activité 2 : j'écoute l'histoire",  the main purpose of the text is to encourage the learners to listen to the story, as the text is intended for the teacher to read to the class. It features two boys and a girl strolling through the forest, with one of them running after a hare.   The

sentence "Kenzo court partout et il se met même à la poursuite d'un lièvre qu'il a aperçu" (Kenzo is running everywhere and he even starts to run after a hare that he saw) indicates that the harassment of NHAs (through meaningless pursuit) is normalised and presented as trivial and banal. The illustration is symmetrical, showing the boy running after a hare, which looks distressed as it runs to safety. This event is also a form of evaluation, where the text portrays it is normal to run after NHAs. The hare has no anthropomorphic trait and no salience; it is portrayed as a random 'prey', serving the purpose of satisfying a form of human curiosity for the child. This represents a form of ego-anthropocentrism as discussed in section 5.2 and normalising such human behaviour towards the hare in the text could have potential impacts on children's learning about how to behave with NHAs, how to treat hares, and how to interact with the natural world.

- On page 115, the rubrics "Je m'entraine à lire" and "Activité1 : je lis une comptine" features a text where the main purpose is to develop the learner's competence in reading. It featured a deer in a house and a hare outside, and though none of the NHAs have visible physical anthropomorphic traits in the illustrations (see Appendix II), the hare and deer do have the ability to speak. In the sentence "Dans sa maison, un grand cerf" (In his house, a big deer), the possessive 'sa' (his – the masculine form has been chosen for the translation as there is no neutral possessive form in French) refers to the ownership of the house, which is not only an anthropomorphic trait, but also underlines a capitalist ideology transposed to a NHA, through the concept of owning property.

- This same aforementioned text also provided an example of inferred anthropocentrism via hunting of NHAs. The hare seeks refuge in the deer's house and knocks on the door for help. There is a conditional consequential relationship between the opening of the

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door and the potential killing of the hare by the hunter; the hare will be saved from the hunter only if the deer opens the door to let him inside the house. Additionally, the deer is represented as the saviour of the hare, saving him from being hunted and killed by a human, underlying a form of NHA solidarity, which was also noted in the story of *Sinn Sinn* in Chapter 4. The textbook presented and framed the hare as being game for human hunting and consumption, which is fundamentally anthropocentric. This potentially leads to children normalising hunting of NHAs and contributes to their anthropocentric construction of knowledge about the biosphere, NHAs as food for consumption (which was a point noted in the interviews with children in Chapter 6), and cultural knowledge too as deer hunting season is common every year in Mauritius.

## 5.9 FRENCH GRADE 2 PART 2

The Grade 2 Part 2 textbook (see Appendix JJ) provides additional representations of anthropomorphic framing of NHAs in terms of mild speciesist discourse as well as the introduction of characters who appear to reflect more metaphorical and symbolic humans, as noted for *Horrible Bear*, *The Tale of Peter Rabbit,* and *Trois Petits Lapins Gourmands* in Chapter 4.

- On page 12, the text features a sad/frustrated looking scarecrow, with one magpie on his hat, two flying around him and one on the ground. The sadness of the scarecrow is caused by the presence of the magpies, as evidenced by the following segment of the text:

   *Pipo l'épouvantail n'est pas content.* [Pipo the scarecrow is not happy]

   U*ne pie s'est posee sur son chapeau.* [A magpie is sitting on his hat]

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The inference, through the establishment of an implicit causal link between the two sentences, is that Pipo the scarecrow is not happy, and magpies are framed as annoying nuisances. This is compounded by the fact that there is the following inference:

> *Et voilà que la pie appelle ses amies! Elles se posent toutes sur les bras de Pipo!*
>
> [And here she goes, the magpie calls her friends! All of them sit on the arms of Pipo!]

There is an underlying element of mischief associated with the magpie calling her friends as Pipo was already distressed. The text also indicates homogenisation as a form of representation because the magpies lack salience, and they are presented as a homogeneous set of birds with no anthropomorphic traits in the illustrations.

Under the rubric "Je découvre les bulles des bandes dessinées" (I discover comic book speech-bubbles) on page 84, the main purpose of the text is to introduce learners to the comic book 'genre'. It features four extracts from different sources: pour parler; pour crier; pour une pensée (to speak, to shout, for a thought). Extracts 1-3 feature NHAs and show ideological elements:

- In extract 1, the setting, despite being outside near a body of water, looks like a class setting. The frog is presented as the teacher of science, wearing a lab coat, using a stick to point at diagrams, and explaining the importance of humid zones. The anthropomorphic traits associated with the frog-teacher are ability to talk, to explain, wearing clothing and holding a stick and using a board; they present his character more like a symbolic human. The visual dimension is symmetrical with the text. The facial expressions of the frog denote happiness and enjoyment and the baby NHAs are seen to follow his teachings. The presence of anthropomorphic traits in the frog is contrasted by a non-anthropomorphic visual representation of the other baby NHAs.

- Extract 3 features a cat being lazy in a basket. The cat is presented as intrinsically lazy and nonchalant, thoroughly enjoying being pampered and spoiled, as evidenced by the text (see Appendix JJ). The vocabulary corresponds to this presentation, and the inference and implicit causality pattern is that being treated like a prince represents the cat as finding worth in this lifestyle. 'Une vie de chat' (a cat's life) is an expression which is (often humorously) opposed to 'une vie de chien' (a dog's life); the latter is speciesist in nature and draws from the negative connotations of 'chien' (dog) as 'méprisable' (contemptible) and therefore difficult and miserable. In contrast, there is a generalisation being made from 'une vie de chat' being like the life of a prince. The cat also has anthropomorphic traits, beyond being able to think and encode thoughts through projected speech. The visual aspect is symmetrical in the text and the drawing shows a lazy cat, in a comfortable basket, with a lazy expression, and his head resting on his paw. The text gives an example of speciesist discourse regarding dogs as commonly used by humans to describe human life, thereby strengthening the negative connotations associated with dogs.

## 5.10 KREOL MORISIEN GRADE 1 VOLUME 2

No instances of textual NHA representations were found in the Grade 1 Volume 1 KM textbook, mainly due to the fact that most of the content was articulated around the self, and the KM class. This section presents the findings and discussions for the KM Grade 1 Volume 2 textbook and highlights instances of NHA representations that are more inclined towards speciesism and utilitarian anthropocentrism than in the English or French textbooks. This section of the chapter also includes the accounts gathering episode with one textbook writer (see section 5.11 below) who wanted to share further reflections on writing a story for the KM textbook. This accounts gathering episode is presented here and not in Chapter 7 as it provides

valuable insights for the interpretation of the story in the textbook. Examples of framing, salience, instrumentalised anthropomorphism, mild speciesist discourse and ego-anthropocentrism are discussed below:

- On page 3, the text is under the rubric "Anou lir enn zistwar" (Let us read a story). It features a non-anthropomorphic ox and donkey, depicted as the means for hauling sugarcane. In the text (see Appendix KK), 'erezman' (fortunately) is an adverb which indicates the usefulness of the ox to humans and there is an inference that the ox was not only a means for the character of 'Ton Ramoo' to transport his vegetables, but also a means of transport for the children to go to school. The expression "ti ena enn vie bef ek enn saret » (… had an old ox and a cart) also refers to the capitalist logic of possession, especially that the text is anchored in a time when the (capitalist) exploitation of land for the sugar industry was the main industry in Mauritius. Thus, there is a double layer of ideology in terms of (1) the capitalist praxis and (2) utilitarian anthropocentrism.

  The idea of possession, in terms of the character 'Ton Cerdor' owning an NHA, is replicated in the case of the donkey through the use of the possessive adjective 'so' [bourik], 'so' [saret] (meaning 'his' donkey and 'his' cart). The donkey is presented as a means of transport, just like the ox, and the use of the term 'teti' (stubborn) as an evaluation; this is a form of speciesist discourse, corresponding to the stereotype that donkeys are stubborn. The stubbornness of the donkey leads to the fury of its owner which leads to a comical situation. This is complemented by visual dimension which shows the children laughing. Both the ox and the donkey are given 'default' salience through foregrounding because they are the only NHAs present in the text.

Beyond the curricular objectives, this text has a layer of cultural didacticism as it evokes a historical dimension. It is a snippet of how children went to school during a time when the sugar industry was dominant in Mauritius. It also mentions how donkeys and oxen were 'used' as a means of transportation, reinforcing utilitarian representations of NHAs in the learning process. Alongside such utilitarian anthropocentrism, the KM textbook also revealed speciesist discourse in the CL related content. On page 62, the text is a nursery rhyme written by a local organisation called 'Playgroup', featuring a mildly anthropomorphic 'fat ox' and a 'little duck', both riding a bicycle. The adjective 'gro' (fat) is derogatory and in KM this is a relatively common speciesist expression, used as a mild insult towards overweight people ('gro bef' or 'to enn gro bef' [fat ox/bull, you are a fat ox/bull]). Such representations add to the cultural construction of oxen, bulls, and cows as 'fat' and impact on how people use references to NHAs as insults to describe other people; this inflicts negative connotations onto the NHAs and devalues their natural traits and behaviours whilst concomitantly imbuing them with human qualities. Children exposed to such discourse in their textbooks could consider this language as normal and such representations of NHAs as acceptable; this may lead to the construction of the cultural knowledge that such speciesist descriptions of human are normal and acceptable too.

Page 72 features a text under the rubric 'Anoulir' (Let's read). It is adapted from La Fontaine's "La colombe et la fourmi" (The dove and the ant) and features the titular NHAs. None of the NHAs are visually anthropomorphic, but the extract below was particularly relevant for my analysis:

> *Apre enn ti moman, li trouv enn saser zwazo avek enn latrap arive. Saser zwazo ouver latrap-la san fer tapaz. Fourmi ti pe bien observ li sanki li kone. Sa ler-la tourtrel ti pe dormi lor enn brans.*

(After a little while, it [the ant] saw a bird hunter with trap coming. The bird hunter opened the trap without making noise. Ant was observing him without him knowing. At this time, the dove was sleeping on a branch.)

*Avan ki saser zwazo trap tourtrel, fourmi fer vit mont lor so lipie ek pik li. Saser zwazo gagn pike. Li les latrap-la tonbe ek li kriye. « Ayo !Ayo ! ». Tourtrel so somey nek ena pou kase, ek li trouv saser zwazo.*

(Before the bird hunter could catch dove, ant quickly climbed on his foot and bit him. He dropped the trap and screamed "Ayo! Ayo!". Dove woke up and saw the bird hunter.)

Despite not exhibiting any anthropomorphic trait, the dove and the ant are given salience through individualisation and foregrounding as they are the only NHAs present in the text; the absence of determiners in 'ant' and 'dove' is also a form of individualisation. The text has a moral-didactic dimension because it foregrounds cooperation and gratitude. However, it also underlines the human-NHA dualism; the NHAs help each other and are united in defending against the human hunter. This NHA cooperation and supportiveness was also noted in the story of the deer and the hare in the French textbook (see section 5.7 above) and *Sinn Sinn* in Chapter 4.

On page 80, under the rubric "Anou ekout enn ti zistwar" (Let us listen to a little story) the text '7 frer tang' (7 tenrec brothers), adapted from Ed Young's 'Seven blind mice', features seven blind tenrecs instead. Tenrecs are mammals common in Mauritius and often have ethno-cultural associations which were discussed in Chapter 1 and Chapter 2 in relation to the Foundation Year Programme (FYP) and Timatou textbooks. In the sentence "Kouma nou kone, tang pa trouv bien kler" (As we know, tenrecs do not see well), the tenrecs are presented as almost blind NHAs, which is knowledge that is also embedded within the local culture in

expressions like 'ouver lizie tang' (open the tenrec's eyes) being used colloquially and jokingly.  The tenrecs are mildly anthropomorphic as they are able to speak and the elephant character is given meaning through metonymic comparison (comparison of its parts) with different objects like a pole, hose, pike, and hill. The elephant therefore has less salience due to passivation and is framed in terms of its parts, which are themselves compared to other objects, rather than as a whole and complete NHA (see Appendix KK). The tenrecs, on the other hand, are given salience through individualisation; each has a different colour and has individual traits.

## 5.11  ACCOUNTS GATHERING EPISODE FOR THE '7 FRER TANG' STORY

For this text, I carried out an additional accounts gathering episode with one of the participants who had given informed consent to participate in a group accounts gathering (see Appendix BB). The participant had expressed a desire to continue sharing reflections on textbook writing and NHA representations and wished to speak one-on-one about the story of the '7 frer tang', as the participant was responsible for the unit which features the text. The objective of the accounts gathering episode was to gather additional data to help further the exploration of NHA representations and author choices. The following questions were asked:

- Why did you write '7 frer tang'?

- Is the story based on anything that you have observed, read, or watched?

- What is your representation of tenrecs?

- What did you want children to learn from this story/activity?

The following themes emerged from the interview and were analysed using the ECDA and general thematic analysis approached discussed in Chapter 3. The responses from the participant helped to deepen my understanding of the writer's choices and processes involved in developing the unit for the KM textbook and how personal experiences and constructions of

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knowledge about NHAs and the biosphere are partially shaped by cultural elements, such as discourse within the family and religious beliefs, as well as the writer's own ecological awareness and personal connection with nature. The participant is also referred to as 'the writer' and as 'B'.

### 5.11.1  Stories being subsumed within curriculum objectives and explicit didacticism

One of the first points that emerged from the interview is the centrality of explicit didacticism as the crux of textual choices made by the textbook writer; the writer chose the texts with respect to the curriculum objectives to be achieved. The texts are subordinated to, and subsumed within, curriculum objectives; texts are not studied on their own but respond to a didactic demand. In the case of '7 frer tang', beyond developing reading competencies, the learners were expected to learn about the days of the week and naming colours. The approach to text selection is hence driven by elements pertaining to explicit didacticism condensed in the curriculum objectives.

### 5.11.2  Representations and speciesism

Despite the text being based on 'Seven Blind Mice', the textbook writer explained that the team chose not to include mice in the text. One of the difficulties, as explained, was that the translation of 'mouse' would be 'lera', which has a hyperonymic value as it encompasses mice and rats. Owing to the negative associations with rats as dirty, nuisance, pests, vectors of diseases, and rodents to be eliminated, 'lera' was replaced by 'tang' (tenrec). This is interesting in the context of the study as it is a clear example where speciesist semantic associations and the semantic representation of an NHA has guided the choice of characters, albeit this is not the only reason.

The ontological properties of the NHA also influenced character choice; tenrecs are known to have poor eyesight, which is also a cause of their death in road accidents, as explained

by the participant. This 'natural' trait of the tenrec was convenient for the textbook writers as it increased the mapping potential of the chosen NHA onto the structure of the story, given that partial blindness represented an intrinsic trait of the tenrec and matched the blindness of the mice in the original rhyme. These semantic representations and associations sparked the reflection on the semantic specificities of KM and how it can influence NHA representation and character choice in curriculum materials.

Speciesist representations were not only associated with the 'lera' but also to the tenrec. As the participant explained, the evocation of the term 'tang' at his residence used to elicit an expression of disgust from a member of the participant's family. B also mentioned the colloquial saying 'santi kouma tang' (smelling like tenrec) when people detected the smell of decaying organic matter. However, B also explained that:

this is erroneous as it is only the smell of decaying organic matter. These poor creatures, owing to their poor eyesight, are often the victims of road accidents and they are left decaying on the roads. This is where this erroneous expression comes from.

The interview also demonstrates how adult representations of NHAs and behaviour can influence, at least partially, the representations of children, as evidenced by this extract:

> *I personally find them very cute. However, when I was small, owing to the behaviour of my mother, I was quite hesitant at how to feel in front of tenrecs. She did not like them and expressed disgust every time they were mentioned, so I was unsure about how to feel, despite the fact that I found them cute.*

This demonstrates how representations are potentially co-constructed and influenced by the opinions and ideologies of others, notably adults in the immediate environment. This type of discourse and its impact on representations of NHAs was also noted in the responses

of children during some of the group interviews, which are analysed in the next chapter as Data Set 3.

An aspect that emerged from this interview is how lived experiences and first-hand encounters with NHAs can form the representations of individuals in a strong way. Though the participant was unsure how s/he felt about tenrecs, a personal encounter changed his perspective, as the extract below demonstrates:

I once encountered a mother tenrec and her six babies. She was trying to get them on the other side of an obstacle, which happened to be a step at my place. My dad and I tried to help them by carrying the babies to the other side. It was an extremely gratifying experience, and that event changed my representations of tenrecs.

This indicates that representations of NHAs are also formed by direct contact with different species; the 'gratification' of the experiences and positive encounters contribute to the positive associations and representations of the NHAs. These could also encourage beneficial discourse regarding the NHAs and, perhaps, lead to beneficial behaviours such as empathy and caring for non-humans. This was also visible in the responses of children in Data Set 3 (see Chapter 6), in which one class had positive representations of crocodiles as they had recently visited La Vanille Crocodile Park, where they saw and interacted with different NHAs. Additionally, this element of first hand lived experience also connects with the accounts gathering, which showed that lived experiences had a strong impact on how the participants constructed their representations and relationships with NHAs; this is discussed in detail in Chapter 7 for Data Set 4.

### 5.11.3 Ethno-cultural associations

The interviewee also pointed out the ethno-cultural associations between a segment of the Mauritian population and the 'tang'. The participant shared that he had been part of the FYP and evoked how "two tenrec characters had to be removed because of unjustified ethno-communal speculations and taboo-related 'precautionary measures'"; this was discussed in Chapter 1, section 1.4.1. The participant also questioned why there was no resistance to the use of *tangs* in the KM textbook, while the opposite was noted for the FYP storybook. In doing so, B is extrapolating the links between the ethnic dimension, asking whether it is more 'normal' to include tangs in a KM textbook compared to other languages like English or French. These responses are pertinent points for reflection because they provide insights into how this ethno-cultural element forms part of this participant's reflections on textbook-writing, indicating how the cultural aspect of representations of NHAs can impact on curriculum choices and texts that children are exposed to in their primary school materials. Concomitantly, it also indicates how the participant recognises representations that are removed from part of children's learning in school.

### 5.11.4 Ecologically harmonious didacticism and tolerance

In response to the last accounts gathering question, B explained that:

> *Beyond the obvious curricular objectives, [they] wanted children to learn that even our very own national tangs can feature in stories. [They] wanted them to learn that every animal, irrespective of any form of cultural or semantic associations, is part of our ecosystem which we share with them. It was about 'normalising' the presence of tangs.*

In this sense, the participant is indirectly referring to a more harmonious view of humans and NHAs, whereby both share the same ecosystem and coexist peacefully. This harmonious

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aspect is particularly useful to my thinking as I posit that an anthropoharmonic view of education is fundamental in the achievement of an ontologically sustainable education, which I discuss in more detail in Chapter 8.

## 5.12 KREOL MORISIEN GRADE 2 VOLUME 1

The two volumes of the Grade 2 textbook (see Appendix LL) consist of a wide range of texts, most of which fulfil an explicit didactic aspect as spelt out in the National Curriculum Framework (2015) with respect to the different competencies to be achieved in reading and writing. Despite being part of the optional languages, the KM curricular objectives are similar to the other language textbooks that have been analysed. Instrumentalised and utilitarian anthropomorphism are evident in this textbook along with instances of cultural didacticism and ego-anthropocentrism. The examples of these are discussed below:

- On page 30, under the rubric 'Mo aprann lir' (I learn to read), the text features a mosquito. The mosquito is framed, through inference, as a weird insect that causes annoyance and the text "Enn drol ti moustik" (A weird little mosquito) is also a form of evaluation. There is a layer of implicit cultural didacticism implicitly 'warning' readers that mosquitoes are a nuisance which was also found in the CL text *Zistwar Mustik* (see Chapter 4), albeit in a more 'direct' form.

- On page 56, the text is an adaptation a story about a child who is sad about the resumption of school and who wishes to be a clown, a sheep, a chameleon or a sea urchin. None of the NHAs have anthropomorphic traits and are mainly evoked in the narrative for their physical properties which are situationally useful for the narrator. In the segment "Kifer mo pa ti enn mouton ? Mo ti pou ena enn linz kimo pa bizin retire" (Why am I not a sheep? I would have a coat I wouldn't have to change), the sheep is presented anthropocentrically in terms of its wool, which is used by human use. In this

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sense, as mentioned above, it is a form of re-transposition of a clothing item originally made from the sheep's wool and evocative of utilitarian anthropocentrism.

- This transposition process of the NHA properties is replicated with the chameleon. In the segment below,  the chameleon is presented in terms of its capacity for camouflage, which would be useful to the narrator and allow the narrator to blend into the background, because s/he is embarrassed about her mistakes:

  *Si selma mo ti enn kamaleon, mo ti pou pran kouler tablo ! Personn pa ti pou trouv mwa ekrir avek tou mo bann fot* !

  (If only I was a chameleon, I would have taken the colour of the board! No one would see me write, with all my mistakes!)

- Likewise, the sea urchin is presented in terms of its spines, perceived as a form of defence against bullying:

  *Anplis pandan rekreasion, Kavi zet mwa anba ek tou dimounn riye. Si selman mo ti enn oursin, mo ti pou pik li bien.*

  (Above that, during recess, Kavi pushes and throws me down, and everyone laughs. If only I was a sea urchin, I would prick him good.)

None of the NHAs are given salience as they are all perceived and represented in terms of their generic properties. It is therefore a form of homogenisation, which coincides with the absence of anthropomorphic traits.  An interesting emerging aspect in this story is ego-anthropocentrism, which has been present in the English and French textbooks also. In the KM story, the narrator is a child who is not happy with the resumption of school and is selecting traits from NHAs that she finds contextually useful for her. While this does not qualify as ideological anthropocentrism, it fits the theoretical construct I proposed in the English textbook

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analysis. The child is arbitrarily selecting NHA traits with which she is familiar and transposing them to her context in support of how she is experiencing her disarray at the resumption of school.

## 5.13  KREOL MORISIEN GRADE 2 VOLUME 2

The Volume 2 textbook (see Appendix MM) provides additional examples which shows how representations of NHAs continue to appear, based on the same general framework that has been apparent in the other textbooks, and continue to reinforce the use of anthropomorphism and anthropocentrism.

- On page 6, under the rubric "Mo aprann lir" (I learn to read), the short text mentions a 'mischievous' monkey who caused annoyance to the main character Rolo. In the segment "Ala zako mont lor so ledo. Li kriye: Ayo!!!" (A monkey suddenly climbs on his back. He screams Ayo!!!), the inference is that Rolo's screaming is consequential and the monkey is framed as a mischievous creature climbing on his back. This corresponds to the common representation that monkeys are mischievous creatures and are always ready to play tricks on others. A common expression in KM which supports this is "montre zako fer grimas" (show a monkey how to be silly), often used jokingly to state someone is teaching an expert, with the inference that monkeys are experts in mischief/silliness.

- Like the previous text, page 84 features a short text with the main character of a 'fat' turkey, Dora. Dora has anthropomorphic traits through being given a proper name, which is a form of salience, and through her accomplishment of actions usually performed by humans, such as eating bread and butter and wearing clothes.
  The adjective 'gro' is derogatory in the sentence "Dora se enn gro denn. Gramatin li manz dipin diber" (Dora is a fat turkey. In the morning, she eats bread and butter) as it

lays emphasis on Dora's size and establishes an implicit causal relationship that her size is a result of what she eats in the morning. The same pattern is noted in other texts in such as 'gro bef' (fat ox) in KM Grade 1.

- On pages 98 to 99, the text features three human characters: two children, Vanessa and Leo, and the father. They went to Black River Gorges, an actual nature reserve in Mauritius, following the passing of a cyclone. There, they discovered an injured baby parakeet which they took home to care for (see Appendix MM). In the segment below, 'sov lavi' (save the life [of]) reinforces the representation that the humans are the saviours of the bird, demonstrating a sense of 'self-sacrifice':

  *Zot kone, bann zanfan, si nou anvi sov lavi sa zwazo-la, nou pou bizin retourn lakaz aster-la mem. Nou kapav re vini enn lot zour. Leo ek Vanessa dakor san ezite.*

  (You know, kids, if we want to save this bird, we will have to go back home now. We can come back another day. Leo and Vanessa instantly agreed.)

From the visual analysis perspective, the illustration on page 98 is complementary to the text and the parakeet is given salience through foregrounding; it is also the only NHA present in the story. The human characters are also framed as caring, demonstrating compassion and affection for NHAs. The text also encompasses implicit didacticism, in the sense that it encourages the active reader to demonstrate the same caring attitude towards NHAs.

- On page 102, the text features a boy, Balou, who has a dog, Scoubidou. In the segment below, 'ena' (has) refers to the notion of possession that Balou is the owner of the dog, which has an existence subordinate to the human owner. The dog is also framed as a

NHA who likes to eat everything and sleep everywhere; additionally, he is also clumsy and careless as he appears to have a propensity to fall in holes.

The dog is given salience through individualisation, through the processes of naming and foregrounding. This representation of pet ownership and subordination of NHAs to the role of pets is seen in the English textbooks, and also in the story of *Joyeux Noel* in Chapter 4; the active reader is thus encouraged to develop an anthropocentric understanding of selected NHAs, such as cats, dogs, and rabbits, as serving the human purpose of pet-keeping.

- The text on pages 119 to 121 is a continuation of the text featuring Vanessa and Leo and the parakeet. In this text, the visual dimension indicates that the bird is framed as a helpless creature lying on a picnic mat, draped in a towel. The helplessness of the creature could be linked to the helpless state in which we were introduced to Sinn Sinn, as a baby on a leaf, in Data Set 1 (see Chapter 4). The reader is thus guided to develop sympathy towards the bird and to construct knowledge that helping injured NHAs is a positive action, in terms of ecologically responsible values.

- The story continues on pages 136 to 137 and the bird is presented as being able to talk, representing a mild anthropomorphic trait, as parakeets are known to repeat human speech patterns.  The fact that the bird is able to speak leads the children to try to teach him another language, as evidenced by this sentence: "Leo, anou montre Kwik sant an angle?" (Leo, let's teach Kwik to sing in English); the children are framed as 'teachers' and could contribute to children's representations of themselves as trainers of NHAs. In terms of textbook content, the above story represents the last one with an explicit didactic purpose forming part of the curricular dimension of the textbooks. The textbook authors, however, included four more texts as additional reading material for

learners in relation to reading for pleasure; the didacticism in these four stories is therefore more implicit.

- The first of the four aforementioned texts, on pages 156 to 159 (see Appendix MM), which is an adaptation of *Feno, le Petit Dodo et le pique-nique sous la pluie* (Feno the little Dodo and the picnic in the rain), features an anthropomorphic dodo, Feno, as the main character, an anthropomorphic monkey and an anthropomorphic rabbit, as his friends. The illustrations support the anthropomorphic traits for the dodos and the monkey, and the characters are also participating in activities which are reserved for humans. The NHAs function as metaphorical human beings.

- The second of the four texts is on pages 160-163. It is an adaptation of 'Farata Man' based on the story of the 'Gingerbread Man'. Farata refers to the paratha, an Indian unleavened flatbread which is popular and commonly consumed in Mauritius. The character of the dog is visually non-anthropomorphic but is given salience through foregrounding and is able to talk to Farata Man, and the faculty of being able to talk is an anthropomorphic trait. The narrative pattern also frames the dog as a cunning NHA who tricked Farata Man and ended up eating him. The active reader is thus led to construct representations of the NHA as cleaver but sneaky and also that dogs enjoy eating 'farata' which, in fact, has no nutritional value for dogs.

- The third text on pages 164 to166 features a mildly anthropomorphic cat and tiger. It also features a dog which guards a human's yard, the latter's presence is therefore a function of its use with respect to the human. The dog is framed as the guard of the owner's yard while the cat is framed as a lazy, cunning, egoistic creature who did not share the food that the tiger had hunted. There is also an evaluation of the cat's behaviour as being an annoying quirk as evidenced by the extract below:

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*Sat ti ena enn mani anter so mal propte […]*

(The cat had a quirk of burying its dirtiness)

The cat and the tiger are given salience through activation and foregrounding. Comparatively, the dog has lower salience as he is homogenised, in terms of his function of guarding the yard of the human owner. The story attempts to insert a form of implicit didacticism as it aims to explain the cat's defecation behaviour by turning it into a form of 'folktale', to give a fictional historical meaning to the event in order to explain how present-day situations have come to be.

This is akin to the story of the *Greedy Zebra*, discussed in Chapter 4, which gave an account of how all NHAs came to have the 'skin' and furs that they do in present times. In the KM text, the cat buries its faeces so that the tiger cannot find it to enact its revenge. The concept of revenge is a human trait transposed to the tiger and is implicitly embedded within the narrative structure; it is intended for the active meaning-maker to infer the vindictiveness of the NHA. The folktale-like text represents the tiger as having stripes because it got into a fight with the cat who scratched it everywhere and left it with striped 'scars'. This is again similar to *Greedy Zebra* and shows the use of CL in textbooks to provide fictional explanations for NHA appearances. The vengeful aspect of the tiger is also comparable to Le Loup Vengeur and indicates that readers are guided towards constructing negative representations of predatory NHAs, such as wolves and tigers, as vindictive creatures.

- The last of the four texts is an extract of *Lilet ek Gaspar* and features an anthropomorphic ant and dog who have the ability to talk (see Appendix MM); they are given salience through foregrounding, activation and individualisation. Visually, the dog has a lower degree of anthropomorphism as it is drawn like a 'generic' dog; the

only standout feature is the facial expression. Comparatively, the ant is drawn with more anthropomorphic traits, featuring two legs, two arms, and a face with human traits. The NHAs visit the beach. While they are there, the use of the connector 'me' (but) in the text presents the potential presence of a human as a threat and as an ominous presence that is a possible disruptor of the joy Lilet and Gaspar are experiencing. The character of the boy is framed as potential danger, and this leads the reader to infer that the human is a threat to the two NHAs.

The reader of this text is therefore given a representation of the biosphere in which dogs and ants can be friends but human beings are potentially dangerous to both and that the NHAs experience an amount of stress and fear when approached by humans. In terms of implicit didacticism, this knowledge may be useful to children so as to understand the possible emotions and reactions of dogs and cats in the biosphere and also how to interact with such NHAs if they come across them at the beach, with stray dogs being a common phenomenon in Mauritius.

The sections above have provided examples of texts related to the CL dimension across the twelve textbooks to show the significance of NHA representations, in terms of ideologies, instrumentalised anthropomorphism, ego-anthropocentrism, salience, and framing. The section below summarises the chapter and reflects on curriculum developers and textbook writers as an interposition between the curriculum materials of Data 2 and the children as intended textbook audience in Data Set 3, which is discussed in Chapter 6.

## 5.14  CHAPTER SUMMARY

This chapter has presented the second data set in relation to text analysis, which is followed by non-text-based data sets next, in terms of children's interviews and accounts gathering. The next findings and discussion chapter presents Data Set 3 for the group interviews with the

Grade 1 learners. These child participants represent the intended readers of the textbooks and active meaning-makers who are exposed to the representations of NHAs. As active meaning-makers and critical readers (Sharp, 2011; Hintz and Tribunella, 2013) textbooks, the stories, poems, rhymes, and activities contained therein, are didactic conveyors that directly and explicitly contribute to children's learning, the construction of their representations of NHAs, and their understanding of the world they live in (the biosphere).

As an interposition between the textbooks themselves and children's active meaning-making, there are different layers of representations from others that are integrated into the materials. For example, the pedagogical choices of textbook writers, the ideological and representational elements of the original authors of texts that are then adapted and used in the textbooks, and collective cultural ideologies, are all interposed between the actual texts and the interpretations of the children who read them. This is discussed in Chapter 7 for Data Set 4, which presents the accounts gathering episodes with curriculum developers and textbook writers that were involved at some stage in the conceptualisation, writing, and production of the textbooks that have been analysed in this chapter.

## 6    INTRODUCTION AND OVERVIEW

This chapter presents the findings and discussion for Data Set 3 which is the group interviews with the Grade 1 learners, in their respective primary school contexts. These child participants represent the intended readers of the textbooks, in terms of being the audience for which the curriculum materials were written. As active meaning-makers and critical readers (Sharp, 2011; Hintz and Tribunella, 2013) textbooks, and the stories, poems, rhymes and activities contained therein, are conveyors of didacticism that directly and explicitly contribute to children's learning, the construction of their representations of NHAs, and their understanding of the world they live in (the biosphere).

Chapter 4 corresponded to Research Question 1 most directly and discussed the ways NHAs are represented in a sample of children's literature in Mauritius, and Chapter 5 related to Research Question 2 and discussed the representations of NHAs in the curriculum textbooks for Grades 1 and 2 in Mauritius. Chapter 6 focuses on the interviews with children as the third data set which aimed to gain insights into the types of NHA representations children have and the relationship between the sample participant's NHA representations and an understanding of the ecosystem in the Mauritian context. Continuing with the ECDA and general thematic analysis, the chapter presents the findings and discussions in terms of the main themes that emerged from the participants' responses to the semi-structured interview questions (see Appendix L) in relation to Research Questions 3 and 4. The main thematic categories which will be discussed further below are:

- Low speciesism and NHA representations through active meaning-making

-   Construction of knowledge and NHA representations through prior knowledge

-   Representations of NHAs based on perceived threats

-   The role of adult discourse and media on children's representations of NHAs

-   Diverging NHA representations and ego-anthropocentrism

-   The importance of pets in the formation of NHA representations

## 6.1 DEFAULT ANTHROPOCENTRISM, SPECIESISM AND NHA REPRESENTATIONS THROUGH ACTIVE MEANING-MAKING

The data (see Appendix NN and Appendix OO) reveals that the majority of the 79 children who participated in the interviews did not display high levels of speciesism, not in the general sense of speciesism as derogatory or prejudiced attitudes towards other species (Singer, 1975). Whilst the examples below (see Table 8) show instances of what could be considered as speciesist discourse towards certain NHAs, they are mild forms more inclined towards ego-anthropocentrism (see section 6.5 below), that do not display prejudicial bias in favour of humans and against members of other species, which is a key aspect of speciesism more generally. There were only 11 instances where children presented speciesism and anthropocentrism in their discourse and framing of NHAs; the frequency was not significant, and the instances are as shown in the table 8 below. In addition to this, the representations of the snail as a notable example are discussed in section 6.2 below.

**Table 8**

*Children's speciesist and anthropocentric discourse and framing of NHAs*

| NHA | Anthropocentric or Speciesist Representation |
|---|---|
| Tenrec | No: 1 |
|  | - Blurk (onomatopoeic reaction, speciesism) |
| Crocodile | No: 2 |
|  | - They are 'bad'/mean(speciesism) |
|  | - They are 'bad'/mean only when they are hungry and then they'll eat people |
| Pig | No: 1 |
|  | - They are 'bad'/mean (speciesism) |
| Snail | No: 2 |
|  | - Disgusting (speciesism) |
|  | - It's dirty. I detest. (speciesism) |
| Zebra | No: 1 |
|  | - Zebra is lazy (speciesism) |
| Horse | No: 1 |
|  | - Run fast, seen at Champs de Marche racing track (anthropocentrism) |
| Cow | No: 1 |
|  | - Gives us milk (anthropocentrism) |
| Bee | No: 1 |
|  | - Gives us honey (anthropocentrism) |
| Chicken | No: 1 |
|  | - Gives us eggs (anthropocentrism) |

The speciesist discourse noted in the interviews show children's reactions to the NHAs that they considered to be unpleasant (for example, tenrec and snail) and their perceived representations to explain why they disliked certain NHAs (for example, crocodiles and pigs). However, no further details were provided by these participants as to why their perceived representations of crocodiles and pigs were as 'bad'/mean NHAs. I use 'bad'/mean specifically because the children spoke in KM and stated that these NHAs were '*move*', which can be interpreted as either bad or mean in English. In the case of the crocodile, another participant contributed their opinion and reasoning that crocodiles are only 'bad'/mean when they are hungry and because of the hunger they will eat people; this provides an additional example of children as active meaning-makers with opinions and ideas, capable of questioning information presented to them and putting forth their own points of view as they construct their knowledge of the world.

In the example of the zebra, when asked to name NHAs, one participant expressed the speciesist view that zebras are lazy. When further questioned about why s/he framed the NHA in this way, the participant explained that zebras are lazy because they lower their heads and that this was learned from watching a cartoon. This is one clear example of how children's construction of knowledge and framing of NHAs is at least partially based on media and how discourse in such media as cartoons (and by extension, films, books, art and so on) can influence children's learning. This is further discussed in section 6.4 below and links to the discussions in Chapter 2 regarding the capacity of transforming life via media and literature and Foucault's (cited in Stibbe, 2015, p. 23) analysis that discourses are "practices that systematically form the objects of which they speak".

In the example of the zebra, how the child has constructed his/her representations of zebras has been influenced by a cartoon s/he watched, leading to a representation of the NHA with a negative connotation of laziness, which is not a natural or inherent physical characteristic

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or attribute of zebras. This relates to Stibbe's (2015) notion of how 'stories', as cognitive structures in a person's mind, influence how the person perceives the world, and in these instances, how the children who were interviewed perceived NHAs. It also links to what Vygotsky (1978) called internalisation, as well as the concept of mediated action in CHAT Theory, discussed in section 2.11, and how children attribute cultural values to NHA mediating artefacts.

## 6.2 CONSTRUCTION OF KNOWLEDGE AND NHA REPRESENTATIONS THROUGH PRIOR KNOWLEDGE

Beyond the active meaning-making aspect, children also revealed that their dislikes were constructions of knowledge from prior experiences. This relates to a form of cultural cognition (Morin, 2008), where children have the capacity to construct their representations from what they are exposed to in their socio-cultural setting. Two instances show that children have some speciesist and anthropocentric representations of NHAs; the latter is further discussed in section 6.7 below. Though children revealed dislikes for several different NHAs, it was noted that they often did not provide any reasons for why they disliked the NHAs; even when asked, children would often shrug as a response or say "koumsamem" (just like that) (see Appendices NN and OO). When the children did give reasons, they expressed that they did not like certain NHAs because of their perceived physical characteristics, behaviours, and habitation. For example, the snail was the most commonly disliked NHA mentioned by 7 interview groups and framed as a sticky creature living in soil/mud. The reasons given for not liking the snail were as follows:

**Table 9**

*Data Set 3 - Representations and reasons for not liking the snail*

| Reason | Indicator | Story |
|---|---|---|
| - Does not like the 'thing underneath' when it eats leaves | - Attribute, action | - Evaluation<br>- Ideology: via adjective 'disgusting. |
| - 'It's dirty. I detest. ' | - Physical appearance<br>- Speciesism | - Evaluation<br>- Ideology: implicit causality pattern: it is dirty, therefore I detest) |
| - 'It stays in the soil.' | - Habitat | - Ideology: figure of speech, metonymy + causality pattern |
| - 'It walks in mud.' | - Habitat<br>- Actions | - Ideology: inference/causality pattern: it walks in mud, therefore it is dirty + metonymy |
| - 'Disgusting' | - Adjective for either appearance or attributes<br>- Speciesism | - Evaluation<br>- Ideology: via adjective 'disgusting. |
| - 'It's sticky.' | - Appearance, attribute | - Evaluation<br>- Ideology: via adjective 'disgusting. |
| - '…because of stickiness' | - Appearance, attribute | - Causality pattern |

The stories and indicators in the table 9 above demonstrate that the children exhibit a certain level of ideological discourse, which appears to be an extension of how they frame the snail as a sticky, dirty creature. Adjectives like 'dirty' and 'sticky' point to ideological elements (Stibbe, 2015) which strengthen the frame in question. The adjectives also suggest evaluation

patterns which emerge from the representations of the children. Another interesting aspect in how ideological discourse is apparent is through metonymy, where the snail's evaluation as being dirty is also linked to its natural habitat in the muddy, humid soil. In this case of the snail, the development of representations is mainly attributable to what the children know about these mollusks and the transposition of, what they perceive to be, dirty traits of soil and mud to the NHA. However, one limitation of this particular representation is that it is not known whether such discourses exhibited by the children are directly or indirectly related to adult discourse and representations; in other instances, this was more explicit, as discussed in section 6.4 below.

## 6.3   REPRESENTATIONS OF NHAS BASED ON PERCEIVED THREATS

Reasons for disliking certain NHAs were based on the perceived threats of the NHAs; crocodiles and sharks, for example, were disliked because they can bite or eat people (which are related to the NHA actions). Snakes and roosters were disliked because they were considered by some children as NHAs that would bite (actions), tenrecs because they 'sting' (actions), worms because they go in the earth (related to NHA habitats), hippos because they are muddy (habitat), giraffes because they have long necks (related to NHA physical appearance), pigs because the nose is disliked (physical appearance), and lions because they sometimes roar (related to NHA attributes/traits). The semantic links established by these children suggest a similar pattern to those that were noted during their process of experiential knowledge construction. This indicates that, at least partially, children are actively engaged in meaning making to construct their knowledge and framing of NHAs, and their representations are shaped by their perceived understandings of the NHA's appearance, traits, behaviour, and living environments. This is a critical phase of child development (Piaget, 1962) and this highlights the fundamental importance of children's literature and textbook discourse for children's learning (Short, 2011; Myers 2005; McGillis, 2011). In turn, this highlights the

significance of early childhood exposure to ecologically responsible discourse and activities, which can be mediated through curriculum materials as one of the key didactic resources used in primary school teaching and learning in Mauritius.

## 6.4 THE ROLE OF ADULT DISCOURSE AND MEDIA ON CHILDREN'S REPRESENTATIONS OF NHAS

The data shows instances (see Appendices NN and OO) where the children's representations of NHAs were built on adult discourse and representations, stories from family members, and representations in the media (TV, cartoons, books). This indicates that young children's representations of NHAs are at least partially influenced by the representations of adults with whom they interact, and who contribute to shaping the children's construction of knowledge about the world and the biosphere, through discourse. The examples below show some of the reasons that children shared for disliking certain NHAs based on representations in the media, and in adult actions and discourse, that had contributed to their construction of knowledge about the world:

- Spider: I watched on TV how spiders are (media representation)

- Ants and Bees: Neither ants nor bees because they make [us] get pimples (lived experience or adult discourse)

- Rat: because in my house, my mum kills them (lived experience and adult actions)

- Mice: because we kill them at home (lived experience and adult actions)

- they bring illness (lived experience or adult discourse)

- Lizard: because in my house, my mum kills them (lived experience and adult actions)

- Frog: my aunt said that when we touch it you'll get pimples (adult discourse/representation)

- Zebra: learned from a cartoon that the 'Zebra is lazy'… 'because it lowers its head' (media representation)

The children's responses, being articulated around lived experienced and media-related information, are significant for this study as they corroborate with adult's accounts in the accounts gathering discussion in the following chapter. The accounts gathering data reveals how participants reported that their own lived experiences, during childhood up till adulthood, as well as media had a profound influence on how they constructed their own representations of NHAs. This links back to the power of children's literature to shape and reinforce cultural identities and the need for widening of modes of representation Short (2011). The children's responses show that it is not only CL and textbooks, but also adult discourse which has an impact on their learning, cultural ideologies, and understanding of NHAs in the ecosystem. Through such discourses, the children are developing new meanings, including negative connotations, and shaping their alterity (Robillard, 2008), empathy, and reflexivity in relation to NHAs.

## 6.5   DIVERGING NHA REPRESENTATIONS AND EGO-ANTHROPOCENTRISM

The interviews also revealed that children have diverging points of view regarding NHAs; they differed in their likes and dislikes and would sometimes oppose each other's representations during the interviews. For example, in Zone 4 Class 1 Group A, two of the participants had diverging representations of frogs. When one child was asked why s/he did not like frogs the initial response was because it has a 'big tongue in its mouth', but when questioned further, the child explained that was not the reason but instead because frogs are 'dirty'. This links back to the patterns observed in section 6.1 and 6.2 above, regarding how children make semantic links to actively construct meaning, thereby reinforcing my stance that children are autonomous active meaning-makers.   Another child interrupted to oppose the opinion of the first and shared

his/her representation that the frog is 'not dirty'. However, the child I had been talking with maintained the framing that the frog is dirty, and when asked why, he/she stated, "because I don't like it".

This example shows how two children of similar age, in the same class and part of the same interview group, had opposite points of view when it came to their personal representations of frogs; for one child it was dirty, for one child it was not. The reasoning of the child who considered the frog to be dirty is an example of how a child assesses the NHA (and more broadly, the world) exclusively from his/her own subjective point of view, adopting an egocentric perspective. This links to and reinforces my argument for ego-anthropocentrism, highlighted in Chapter 5, and shows how NHA representations can converge around a form of children-specific anthropocentrism related to the egocentric phase of psychological development which characterises children's linguistic and social behaviour (Piaget, 1962).

## 6.6   THE   IMPORTANCE   OF   PETS   IN   THE   FORMATION   OF   NHA REPRESENTATIONS

The participants' responses also show that some of the children's statements and points of view were grounded in their respective immediate environments (see Appendices NN and OO). For example, children have a tendency to mention their pets when it comes to NHA preferences. One child, in the interview with Zone 3 Class 1 Group B, stated that his/her favourite NHA was the dog because this was the pet at home; another participant in Zone 2 Class1 Group C stated s/he liked dogs because this was the NHA that had been brought home by his/her uncle. This suggests that affective bonding, through pet companionship, has a direct influence on how children build rapport and thus construct their representations of NHAs. This relationship between such representations and relationships with NHAs could therefore be influenced by and shaped from the children's active meaning-making of the texts that they are exposed to in

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the language textbooks, as there were several instances of CL related texts that used the topic of pet keeping which were discussed in sections 5.2, 5.4 and 5.12 of the previous chapter. These texts may have contributed to the normalisation of pet keeping within the local context and could potentially influence how children interact with such NHAs, whether in terms of anthropocentric subordination of the NHA or based on the didactic component of kindness and caring for NHA companions.

This thematic category was also evidenced during the accounts gathering episodes, presented and discussed in Chapter 7, where participants often mentioned the importance of their pets and affective bonding in their own representations. From an ecolinguistics perspective, the notion of the 'pet' is a mildly anthropocentric one where the NHA serves the purpose of companionship for the gratification of the human. However, the discourse embedded within this notion is not necessarily destructive (Stibbe, 2014) as evidenced by the affective bonding between the children in this data set (and the adults in Data Set 4) and the NHAs which led to positive representations of NHAs. In order to move towards more ecologically responsible education and activities, there is a need for ecologically responsible discourse towards NHAs and the environment; ecologically responsible representations of NHAs from adults within the school environment are therefore important, as is discourse in children's literature and school textbooks. I argue that while the inclusion of 'pets' in curriculum materials is not necessarily destructive, there needs to be more balanced representations of NHAs to recognise their autonomous intrinsic value, notably in terms of their participant identity, meaning how they are represented as participants in discourse (Stibbe, 2015).

## 6.7    CHAPTER CONCLUSION

This chapter provided insights into how children construct their representations of NHAs. The data demonstrated that children are active meaning-makers and are able to critically maintain their points of view on how they perceive NHAs, as evidenced by their ability to tap into their prior knowledge and also in their diverging points of view on specific NHAs. They are able to establish semantic links autonomously in the process of meaning-making, which feed forward to their representations. Ego-anthropocentrism, a construct I proposed in the text analysis of Data Set 2 in Chapter 5, was also highlighted in children's discourses, notably in terms of how they represent NHAs based on the information they gathered from different experiences. Though this is a form of default anthropocentrism it also highlights how early exposure to discourse about and representations of NHAs yields the potential to influence the understandings that children develop about nature and the environment.

The importance of adult discourse and media, notably through transmediation, was also foregrounded. This is significant as it consolidates my perspective according to which the choice of discourse and material is fundamental in education and curriculum as children actively construct meaning through the material they are exposed to. CL, textbooks, and media representations are all artefacts that helped the participants construct their representations of NHAs; this may also orient their behaviour and actions towards NHAs, the environment, and other humans as well.

Another significant element which emerged is the importance of pets. While the construct of the concept 'pet' is anthropocentric (Serpell, 1999), it does not necessarily lead to destructive discourse (Stibbe, 2014) as it allows the children to bond with NHAs and develop positive representations. This could potentially impact on their learning about the environment also in terms of how children shape more positive connections and beneficial discourse in

relation to the local ecosystem in Mauritius and the biosphere. Adults during the accounts gathering episodes in the next chapter also reported the importance of pets, lived experiences and media in how they progressively constructed their representations. It is therefore important to reflect on the types of discourse and media that children are exposed to from a young age, notably in the school environment where didactic elements are explicit and intentional.

The following chapter presents the findings and discussions for the fourth data set, accounts gathering with curriculum developers and textbook writers. The participants of Data Set 4 were all involved at some stage in the conceptualisation, writing, and production of the textbooks that were analysed in Chapter 5.

# CHAPTER 7 — FINDINGS AND DISCUSSION

## Data Set 4: Accounts Gathering

## 7 INTRODUCTION AND OVERVIEW

This chapter presents the findings and discussion for Data Set 2 which is the accounts gathering with the English, French, and Kreol Morisien textbook writers and curriculum developers. Accounts gathering was mainly articulated around Research Question 3: What are the relationships between non-human animal representations in curriculum material and culture in Mauritius? The findings from the accounts gathering were partly read against those from the interviews with children, as the data obtained were from two different sources that in many ways represent the didactic 'producers' and 'receivers' respectively.

The first part of this chapter presents the condensed, summarised thematic findings from the accounts gathered in the four episodes. Following these sections, I delve deeper into each accounts gathering episode in the second part of the chapter, in an attempt to maintain accuracy and details of the discourse and representations. One of the specificities of accounts gathering is the relevance of the accounts based on principles of distinction within each episode. Distinctions between examples and discourse nuances are prioritised rather than the homogenisation of themes; I considered the latter as reductive because homogenisation of themes does not capture or foreground the nuances.

For this reason, I chose to present the data in terms of the four episodes. This may appear as some repetition of certain key points or themes in relation to NHA representations, however, the reporting of each episode is grounded in the time and space in which the accounts were gathered to recognise and be truthful to the voices of the participants. This includes the manner in which they choose to articulate their ideas, the specificities of the language they use

to describe their experiences and share knowledge that they have constructed, which forms the data for the accounts gathering. I adopted the same perspective with respect to textbook analysis, considering each textbook as an 'ecosystem' providing specific details.

The different accounts gathering episodes were analysed thematically using the ECDA model to assign preliminary codes, as was the case for the three previous data sets; then I searched for patterns or themes in the codes across the different episodes and Stibbe's framework also complemented the emergent themes in the accounts gathering.

## 7.1 SUMMARY OF THE MAIN THEMES EMERGING FROM THE ACCOUNTS GATHERING

In this section, I present the main themes that emerged from the accounts gathering episodes. This summary represents a broad perspective of the main findings and serves as a backdrop to the more detailed analysis that follows in the subsequent part of the chapter.

### 7.1.1 *The prevalence of cultural knowledge in the construction of NHA representations*

Cultural knowledge was one of the most significant aspects of this data set regarding the construction of representations of NHAs. Discourses anchored in cultural knowledge encompassed destructive, ambivalent, and beneficial discourses (Stibbe, 2014). Religious knowledge also appeared across all episodes of accounts gathering and it was clear that such noospheric knowledge (Morin, 2008) had a direct impact on how the participants viewed, experienced, and constructed their representations of NHAs. This also indicates that such representations have potential impacts on the cultural discourse in textbook development, which are discussed below.

### 7.1.2 *The impact of cultural discourse on textbook development*

Cultural discourse was found to have a profound impact on textbook development, notably in reference to the Foundation Year Programme (FYP) (see Chapter 1 for details). All participants

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who were part of this project mentioned several obstacles faced by panel members in relation to the culturally- mediated speciesist reactions against some NHAs, like the pig and the tenrec. Multiculturalism was, in this sense, presented as a hindering factor by one participant. While the textbook writers did not necessarily consider any NHA as problematic, choices were operated as a consequence of the representations of other stakeholders. Hence, the textbook as an 'ecosystem' is not only a result of the representations of textbook developers, story authors and original authors of story extracts, but also influenced by other stakeholders who directly or indirectly participate in the conception and finalisation of the material.

### 7.1.3    *The importance of NHAs in children's lives*

According to the curriculum developers' assumptions, NHAs are very much present in children's lives. This explained their pedagogical and character choices, building on this element of familiarity and affectivity. Media, in this sense, were presented as being fundamental, as children are able to construct meaning with respect to how information is presented in different media. However, in the context of children's interviews, one of the elements regarding findings concerned how children also constructed their representations of NHAs through a combination of adult discourse and media depictions, notably through television and books. Learning about the biosphere, in the case of children, is at least partially rooted in the interplay between adult discourse and media; again, transmediation becomes a fundamental aspect.

### 7.1.4    *The axiological dimension associated with NHAs*

Beyond the pedagogical relevance of NHAs in textbooks, as a catalyst to the achievement of curricular objectives, participants agreed that the use of NHA characters in textbooks was also for the purpose of encouraging the children to develop the values of alterity, empathy and caring towards non-human species.  Hence, NHAs also encompass an axiological aspect, inasmuch as they are value vectors in terms of their didactic integration to textbooks.

### 7.1.5   The centrality of first-hand experience

Empirical encounters were found to be essential in how participants developed their relationship with and representations of NHAs. The experiential dimension was such that in some cases, it transcended anthropocentric cultural knowledge, and had a transformative effect on the outlook of participants who had previously had a reductive view of the NHAs in question, before the first hand encounters and experiences. This is significant as it also corroborates with the data gathered during interviews with children. Pets were central in their discourse and they constructed a large part of their representations and liking of NHAs via their own experiences with their pets who, for most of the participants, formed part of their family circle.

### 7.1.6   Books and anthropomorphism

The participants also mentioned the important place of books and NHA characters in how they built their representations of NHAs. *Animal Farm* (Orwell, 1945) was one of the books cited by two participants which changed their perspectives about NHAs and subsequently allowed them, through the use of metaphor, to understand the mappings with socio-political systems. Anthropomorphism combined with metaphoric devices (Stibbe, 2015) were also helpful for participants in making sense of stories and further developing empathy towards NHAs.

### 7.1.7   Ego-anthropocentrism and active meaning-making

Several of the participants reported that at some point, during their respective childhood, that 'owning' a pet was rooted in anthropocentric elements, like guarding for dogs and controlling mice for cats. The horse as the object of anthropocentric discourse during childhood has been observed in both the accounts gathering episode 1 and interviews with children, where the horse was mentioned in relation to horseracing. However, the way the participants in the accounts gathering, and the children in the interviews, construed their own meaning of the horse corroborates with my concept of ego-anthropocentrism. The participant who mentioned

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the horse during accounts gathering episode 1 constructed an imaginary, desirable and beneficial discourse around the horse which symbolised his professional aspirations and his fascination of horses as an object of awe.

This also feeds back to my interrogations around how children do not necessarily or automatically display anthropocentric or speciesist discourse, and many of their representations are based on how they subjectively experience NHAs. This is significant as it links back to how first-hand experience is fundamental to the construction of representations and relational dynamics with NHAs, at least during the egocentric developmental phases (Piaget, 1962). During the interviewing process, this element of ego-anthropocentrism was particularly relevant as it not only aligns with findings in the data sets for the accounts gathering and the textbook analysis, but also sheds light on the active meaning-making processes of the children. During the interview, one important finding was that children do not display high levels of speciesism. In fact, they did not display speciesism as it is manifested in adult discourse. Instead, they construct meaning based on a form of ego-anthropocentrism and the ability to reason and represent NHAs was being constructed from their own generated knowledge as per what they observed and experienced. The adult textbook writers also revealed how their active meaning-making as children in relation to pet ownership influenced their NHA representations.

The following part of Chapter 7 provides more detailed analysis of each accounts gathering episode, of which there are four. For anonymity, all respondents will be referred to as 'the participant' with the additional use of the masculine 'he' or 'his' applied to all the participants to reduce potential identification markers between genders. Each accounts gathering episode was analysed in terms of the participants' responses to each question as there are notable differences between the responses of the participants in different episodes, despite having similar profiles. Additionally, the cultural nuances can be noted in the specific responses and through respondent validation some participants indicated that they wanted specific details

to appear in the final thesis; for these reasons, I justify separating the points for discussion by episode and not subsuming them under general themes. The general organisation and structure of this second part of Chapter 7 presents the findings and key information from the detailed discussions related to each question and each participant's response, followed by a synthesis of the episode. A synthesis across the accounts gathering episodes is provided in the concluding remarks of this chapter in section 7.40.

## 7.2 ACCOUNTS GATHERING EPISODE 1 QUESTION 1: PERSONAL RELATIONSHIPS WITH NHAS

There were four participants in accounts gathering episode 1 (see Appendix PP) and their profiles were that of academics who have participated in textbook writing and curriculum development. The emergent themes related to Question 1 for this group accounts gathering episode are detailed below.

### 7.2.1 *The importance of media and first-hand experience in constructing representations of NHAs*

Media was highlighted as an important factor in the construction of representations of NHAs. This is a recurring element in accounts gathering, as well as textbook analysis and interviews with children, notably through transmediation. In this case, the participant retained relatively beneficial discourse elements from animated films, which reinforced perceptions of NHAs as being cute.

The importance of first-hand interactive experiences with NHAs not only seems to be a strong element in the formation of representations for the participants in this episode, but also appeared several times in the discourses across the different accounts gathering episodes; this is discussed in section 7.38. Through first-hand experiences and encounters with NHAs, there is an element of affective bonding which occurs. For one participant, despite having a strong

affective bond, he did not "know how to relate to dogs" as the latter were kept separate from the immediate home environment. This 'dilemma' was further enhanced by how the participant's mother decided not to keep dogs anymore because it was an inconvenience to the household, and the participant shared that his mother felt she spent too much time cleaning their 'dirtiness'. This shows how an ambivalent discourse around dogs in the household, in terms of being good companions but having to be kept separate as they are dirty NHAs, led to hesitations in how the participant perceived dogs. It simultaneously highlights the impacts of adult discourse on children's construction of knowledge about the biosphere.

### 7.2.2 *Academic knowledge in the formation and sustenance of NHA representations*

An important emerging theme during this episode was the importance of academic knowledge in the formation and sustenance of NHA representations. One participant's response illustrated this through his reflection on the normalised dissociations between the biosphere and the anthroposphere, which contrasts with his own as he states that for him, NHAs are as entitled if not more, to occupy biospheric space on earth. Further probing revealed that he developed additional sensitivity to ecological issues and ecolinguistics as his own doctoral research involved the exploration of ecolinguistics as a theoretical lens. This, in turn, led him to develop a generally beneficial discourse standpoint with respect to issues concerning the ecosystem.

### 7.2.3 *The articulation of discourse around anthropocentrism*

Another theme which emerged during the accounts gathering interview was the articulation of discourse around anthropocentrism, which represents a few challenges. In one participant's response, his first articulation of NHA representations is grounded in an anthropocentric trait of the consumption of NHAs, whilst non meat-eating participants did not express this anthropocentric attitude towards NHAs. However, participants also expressed knowledge of a vertical hierarchy in how NHAs were perceived. The same type of hierarchy was also seen in children's language textbooks for Data Set 2, where NHAs were presented in terms of 'food'.

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The use of the verb 'to have' can be ideologically significant and indicates the idea of possession; in relation to the responses of the participants, this ideological use of 'I had' or 'I have' was noted in relation to the discussions on  pets which were represented in an anthropocentric form in terms of commodification. This appears to be linked to the global social praxis of capitalism (Bang & Døør, 2007), which is in turn the crux of one of the deepest forms of destructive discourse (Stibbe, 2014). The use of an apparently trivial verbal form, in the discourse of one participant, who clearly considered his own positioning along the lines of a beneficial discourse, led me to question how capitalist logic can be insidious and present itself in discourse, without the speaker's awareness or reflection on the ecological ramifications of such language. This can be linked to *The Tale of Perter Rabbit* and Mr McGregor's view of Peter as a food source to put in a pie and a pest to his garden, similar to *Sinn Sinn* where the caterpillar was considered as a pest in the garden owned by Bonom Mustas.

## 7.3 ACCOUNTS GATHERING EPISODE 1 QUESTION 2: PERSONAL SIGNIFICANCE OF NHAS

The emergent themes related to Question 2, regarding the personal significance of NHAs to the participants for this 'Accounts Gathering Episode 1', are detailed in the sub-sections below.

### 7.3.1 *Intermeshing of media and anthropocentrism in the construction of NHA representations*

This question elicited diverse responses; for example, one participant spoke about a love of horse racing and this is an anthropocentric practice. For the participant, the horse is significant because it represented his professional aspirations when he was young. This was catalysed by his interest in watching and following horseracing on the television. Horseracing as a significant part of individuals' lives also emerged during interviews with children, where one child claimed that he liked horses because he had been to the racing track with his mother.

In the case of this accounts gathering participant, the intermeshing of media and anthropocentrism contributed to how horses have been significant for him. Though anthropocentrism generally represents destructive discourse, horseracing represents ambivalent discourse, and the participant did not have any destructive or ambivalent representations during childhood, which links to my hypothesis of ego-anthropocentrism as being a form of representation experienced by children. Children, at the developmental state of egocentric thinking (Piaget, 1962), invest stories which are relevant to them in the construction of their subjective, egocentric, representations of NHAs. In this case, the participant wanted to be a jockey when he was a child. Additionally, the lived experience of the participant in caring for his dog led him to develop a form of empathy towards them "sometimes, you feel that the animals are sad", which led him to question how they were "rearing" them. This provides an interesting example of affective bonding and empathy in relation to NHAs as 'pets' moving away from the anthropocentric discourse of subordination and into more ecologically responsible thinking in terms of NHA companions, through empathic reflection.

### 7.3.2   *Academic knowledge in the formation and sustenance of NHA representations*

Academic knowledge represents one of the milestones in one of the participant's lives and relationship with NHAs. The experience of doing master's level research on the topic of literary bestiary contributed to shaping his knowledge and representation of NHAs. The participant claimed that his research helped him realise that NHAs are very much present in his life. The academic knowledge he acquired also helped him reinforce his religious and cultural knowledge pertaining to NHAs as it fed forward to how he was able to transpose NHA characteristics analytically to narratives and stories in religious texts. In this sense, academic knowledge and cultural knowledge contributed to beneficial discourse. This connects in a rhizomatic way to accounts gathering episode 4 where the participant considered the

importance of academic knowledge and research to offset or mitigate culturally destructive discourse and negative NHA representations.

### 7.3.3    *The significance of cultural animal symbolism in the representation of NHAs*

One participant evoked the importance of NHA symbolism in Chinese culture. The participant therefore invoked beneficial discourse and stories transmitted by, or conveyed through, cultural knowledge, in terms of how the NHA birth-sign impacts on how one will be in terms of personality and how events unfurl in one's life. The cultural dimension is also pursued by another participant, who talked about the representation of certain religiously significant NHAs in his environment. He evoked the representation of pigs with respect to one of his parents. Starting from the Quranic prescription according to which pigs are impure for consumption, he explained how this statement is magnified in the representation of his biological mother, who has a visceral reaction of disgust when pigs are mentioned. The example he gives is her reaction when pigs appear on television. He also explained that this pattern appears to be replicated in his immediate environment as far as the cultural and spiritual dimensions are concerned.

The same participant also mentioned the case of the snake, which he explained inspires fear because it is associated with the Bible and that the snake tempted Eve to eat the apple in the Garden of Eden. For the case of the pig, his parent generalised ambivalent religious discourse, in terms of pigs being impure for consumption, and amplified it into an appropriated form of destructive discourse based on the evaluation that pigs are bad; the same representation applied to snakes, and both of these lead to a form of erasure in the lives of the people he mentioned in his examples.

### 7.3.4    *First-hand interactive experience and shifting of NHA representations*

One participant evoked his experience with respect to the perception of pet dogs. This instance is particularly interesting as it demonstrated how representations can change over time. He

begins by mentioning how dogs were considered primarily from an anthropocentric perspective as "guard dogs", despite also sharing that he had an affective relation with dogs: "Since small, we had pets which we cared for, fed well etc., but there was no affective relationship because dogs were for guarding". This represents an ambivalent type of discourse (Stibbe, 2014). However, from childhood to adulthood, there was a shift in perspective as the first-hand experience of owning dogs changed the outlook and relationship of the participant with respect to the NHA. At the time of the accounts gathering episode, he expressed that now he has dogs and "speaks to them like they are children, and they have reaction like kids" and express "jealousy". The latter description is a transposition of a human trait on the behavior of dogs; the examples show how the participant's first-hand experience transcended anthropocentric teachings in the household and helped in the formation of his own representation. The representational discourse shifted from ambivalent to beneficial.

## 7.4 ACCOUNTS GATHERING EPISODE 1 QUESTION 3: CULTURAL SIGNIFICANCE OF NHA REPRESENTATIONS

One participant contrasted how the pig is represented in the Chinese culture, as an NHA associated with prosperity. This prosperity, however, is largely down to an anthropocentric representation of the pig, where it is "always present in festive dishes". This is reinforced by the evocation of an expression "dan koson, tou manze ladan" (everything is good in the pig). The participant further supports this anthropocentric representation of the pig in terms of usefulness and profitability when he stated that it is common knowledge "when one rears pigs, nothing will be lost". This is particularly interesting as the 'beneficial' discourse of pigs representing prosperity is based on an anthropocentric-utilitaristic representation founded on the destructive discourse of NHA exploitation.

## 7.5 ACCOUNTS GATHERING EPISODE 1 QUESTION 4: EXPRESSIONS AROUND NHAS

Most of the expressions evoked are speciesist in nature. One participant cited the use of NHA names as a derogatory remark or an insult: "ta koson [you pig; dirty, fat]; ta lisien [you dog; disorderly, no manners, dirty]; Sa enn mari bourik sa [he is such a donkey/ass; stupid]; ta zako [you monkey; silly, ill-mannered]". Interestingly, the participant said that no one will say something like "ta seval [you horse]" because of the connotations associated with different NHA, the assumption being that there is an ambivalent discourse or more positive connotations for a horse compared to the other NHAs listed in the insults, whose representations are more aligned with destructive discourse.

The response of another participant in this group laid the foundations of a subjectivist perspective on how certain terms are used. He stated that dogs are perceived as not having self-respect, which is against his own representations. A second participant added a layer of cultural significance to this statement, in relation to speciesist uses of NHAs as insult. He stated that for a Muslim, for example, the term 'pig' can be an even greater insult because of how pigs are culturally represented; this is an example of a response which captures the cultural nuances that are meaningful to the participant. In this case, it appears that a fundamentally destructive discourse (speciesism) is given an additional layer of socially destructive discourse once it is used to violate certain social taboos, notably in relation to religion.

## 7.6 ACCOUNTS GATHERING EPISODE 1 QUESTION 5: ELEMENTS WHICH INFLUENCED OPINIONS ON NHAS

The emergent themes related to Question 5 for this 'Accounts Gathering Episode 1' are detailed below.

### 7.6.1 Humans and NHAs as being part of the ecosystem

Drawing from his knowledge and readings of Darwinian evolutionary theory, a theme that one participant stated was that humans are not supposed to dominate society; humans and NHAs form part of the ecosystem. Darwinian Theory, therefore, represents beneficial discourse in this participant's construction of knowledge and shows the importance of learning experiences and reading materials on constructions of NHA representations. The participant also drew from spiritual and religious knowledge of Hinduism to support his statement and further explained the element of empathy, concluding that his state of vegetarianism may also be because he felt closer to NHAs.

### 7.6.2 The significance of stories in the construction of NHA representations

One participant recounted his experience of a story that was in the French textbook when he was at school, titled 'Jean Malpropre (Dirty Jean)'. The story was about Jean, a dirty boy who was approached by a pig who asked to be friends with him. It was the point when Jean realized that he has to change his 'dirty' ways because it came to the point where a pig wants to befriend him and this was a sign that he had become as dirty as this NHA. The text is based on destructive speciesist discourse which reduces the pig to a 'dirty' creature and not one worth befriending or even being associated with, especially in relation to hygiene.

## 7.7 ACCOUNTS GATHERING EPISODE 1 QUESTION 6: SIGNIFICANCE OF BOOKS, STORIES OR LEARNING EXPERIENCES WITH RESPECT TO NHAS

The emergent themes related to Question 6, regarding the significance of books, stories or learning experiences with respect to NHAs in the participants' lives, for this 'Accounts Gathering Episode 1' are detailed below.

### 7.7.1 The role of anthropomorphism in the development of beneficial discourse

The element of anthropomorphism appears to play a central role in how the participants constructed beneficial discourse of NHAs. However, one participant started by mentioning how the film 'Sea Biscuit', featuring a racing horse, pushed him to know more about horses and appreciate them, especially now that he follows horseracing and betting. The film was a motivating factor for him to explore the different facets of horseracing and develop further analytical skills. Again, a fundamentally ambivalent, anthropocentric discourse is transformed into beneficial discourse by the interpretative and experiential filters of the individual. The impact of the film also highlights the aspect of transmediation as the same participant previously mentioned how he followed horseracing on television and how this shaped his representation of horses.

### 7.7.2 The blurring of human-NHA frontiers through books

For one participant, texts featuring NHAs were strongly present in his life. The participant stated that through the books, he did not perceive NHAs as 'animals' but as human characters, much like animated films, because the NHAs were anthropomorphic. This reinforces the notion of the NHA as a symbolic human (Burke & Copenhaver, 2004; Huggan & Tiffin, 2010; Tüür & Tønnessen, 2014). However, this perspective changed over time as the participant realised that nowadays, according to him, NHAs are often presented in a way that denigrates them and that this realisation triggered in him an intention to write about NHAs in more positive ways and incorporate this more positive perspective in the textbook writing in which he was involved. The transposition of human characteristics, according to this participant, was often not very valorising and he mentioned *Charlotte's Web* (a piece of children's literature) as an example of a story he likes because it allows us (as humans) to question ourselves and to understand things from the perspective of NHAs. This highlights how CL can have an impact on children for developing empathy and reflexivity towards NHAs.

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Another participant recounted how he grew up with comics featuring anthropomorphic NHAs and how this anthropomorphism led him to blur the frontiers of difference between humans and NHAs. This helped him to forge his own representations of NHA, which was in opposition with what his immediate environment manifested. Anthropomorphism, therefore, contributed to constructing beneficial discourse. Another participant rebounded on what the previous participant stated and explained that he did not realise that Mickey Mouse was a mouse until he was in third grade. He also mentioned other comics like Lucky Luke and Tintin which featured NHA companions, as examples of books that blurred the frontiers between humans and NHAs.

Another participant related himself to the same line of thought and mentioned that he realised the difference between NHA characters and humans after years. He mentioned cat characters which, for him, were not really cats, as they had facial expressions and behaved like humans. Once again, anthropomorphism played a key role in this representation of NHAs as metaphorical or symbolic humans. For him, integration of NHAs to stories was "normal". This is significant in terms of the participant's role as a contributor to curriculum development and textbook writing and the potential choices that could be operated in terms of texts, CL, activities, and NHA representations that are included in primary school textbooks and curriculum materials.

## 7.8  ACCOUNTS GATHERING EPISODE 1 QUESTION 7: RELATIONSHIP WITH NHAS AND PROFESSIONAL PRACTICE

Question 7 concerns the professional practice of the participants in terms of their academic responsibilities, teaching, and teaching-related duties. Only one participant responded, and he stated that eco-critical discourse analysis forms part of his professional practice, as a lecturer in linguistics. Further probing revealed that ecolinguistics also formed part of his doctoral

research work; the professional practice of the participant is informed by and informs his own posture in regard to beneficial discourse on ecology. The participant validated this information and insisted that it was important to include.

Though this participant explicitly mentioned ecolinguistics and ECDA, none of the others responded to this question and this demonstrates that people who are involved in curriculum development do not necessarily have this awareness of discourse in relation to ecology, nature, and NHAs.

## 7.9   ACCOUNTS GATHERING EPISODE 1 QUESTION 8: IMPLICATIONS OF NHAS IN CURRICULUM OR TEXTBOOK WRITING

This last question directly concerned the participants' experiences in curriculum textbook writing and indicated that ecological awareness and awareness of ecolinguistics were factors in the development of beneficial discourse (Stibbe, 2014). One participant mentioned another participant, who was present in the same episode, and explained how the issues of anthropocentrism and speciesism were carefully taken into consideration when they worked on textbooks. This can be partly explained by the ecological and ecolinguistic awareness of the participant who subsequently shared the importance of beneficial discourse for textbook production.

Another participant mentioned the case of Timatou (see section 1.4.1 in Chapter 1) where the book "had to be rewritten because of two [little bits of] tang". He also took this example and mentioned how it is "typically Mauritian" to want things in hiding, even if they are simply natural parts of the ecosystem. He mentioned the taboo associated to tenrecs: "even though many eat tenrecs, we will never see one 'hanging' or people selling" and contrasted the situation with Reunion island, where it is not taboo. This foregrounds how the cultural dimension of the collective cognitive capital (Morin, 2008) has a consequence in how NHAs

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are represented.  His response evoked the erasure of the tenrec from the book due to anticipated ethnic tensions, as discussed in section 1.4.1 of Chapter 1. Triggered by these topics, another participant evoked a meeting, regarding Timatou, where a member of the syndicate of primary teachers questioned the use of NHA characters; the participant stated that if this question was genuine, the person was unaware of how surrounded we are with NHAs. This again foregrounds the notion of interposition and how the representations of different stakeholders beyond the immediate circle of curriculum development has an impact on the discourse within textbooks, including the erasure and exclusion of certain NHAs from a part of children's learning in school.

One participant explained that the Timatou experience highlighted at "what point the society does not want to move forth". He recounted that the initial idea was to give value to NHAs that were not usually present in books, explaining the choice of including tenrecs among others. He also stated that the pig was erased, pointing out that the pig did not even make it to the first published book unlike the tenrec characters who did and were excluded almost immediately after the launch. He also mentioned that the initial discourse of teachers was not antagonistic; it was at a later stage that teachers appeared to be influenced, partly owing to a number of other factors including lateness of the delivery of the textbooks in schools once term had already started and numerous communication issues. The participant drew from this experience of curriculum development to state how this made her "realise that the multiculturalism of Mauritius, instead of enriching us, impoverishes us because there are many hurdles, interdictions, which is a form of hypocrisy, as we all learn the story of the three little pigs in pre-primary school". Here, multiculturalism is seen as a contributing factor to destructive discourse in relation to ecology but in relation to constructions of cultural knowledge.

## 7.10  SYNTHESIS OF ACCOUNTS GATHERING EPISODE 1

This section summarises the key themes and emerging elements from the analysis of the responses to the questions for the first accounts gathering episode. This is presented below in Figure 10 as a synthesised diagram and discussed thereafter:

**Figure 10**

*Synthesis of Accounts Gathering Episode 1*
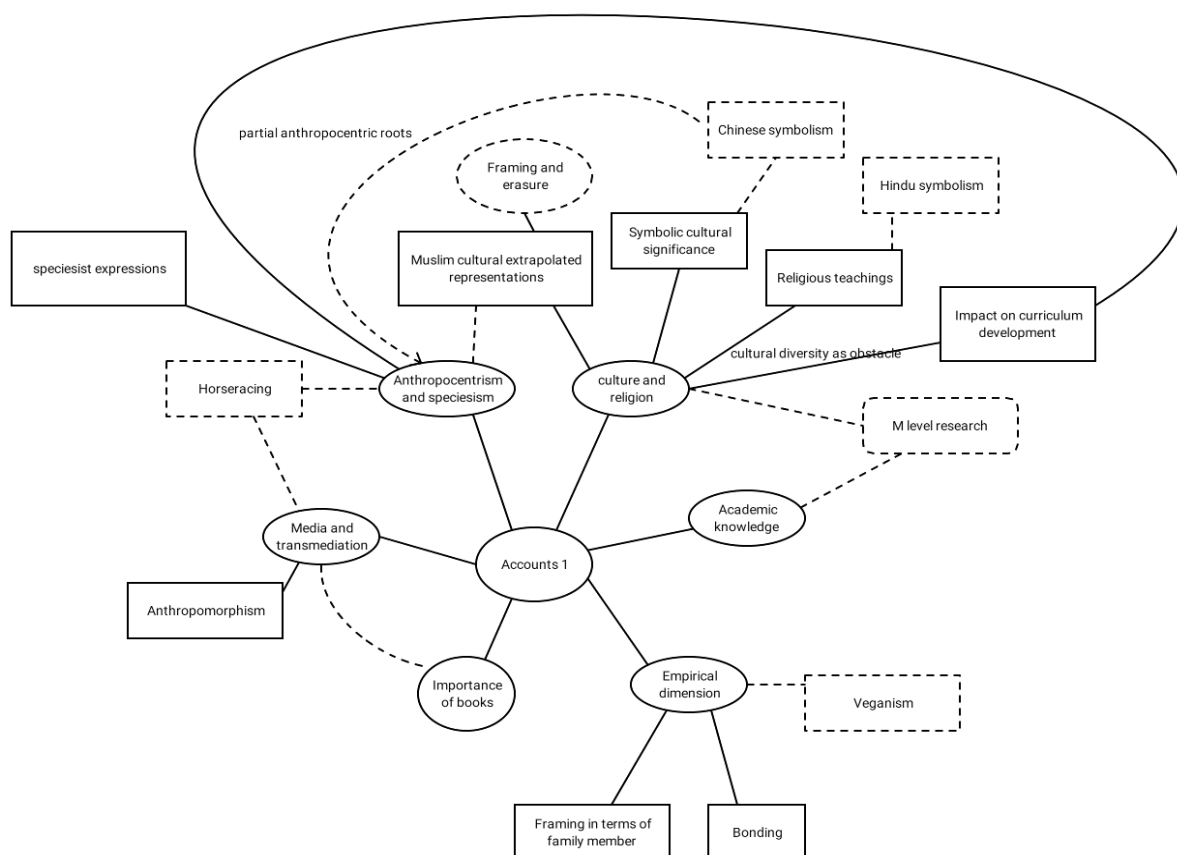


Figure 10 shows that the accounts are grounded in a particular social and cultural context, and the meanings of each of beneficial, ambivalent and destructive discourses are nuanced. For instance, destructive discourses are mainly articulated around how NHAs are perceived negatively, represented or erased, either through inter-generational knowledge transmission or cultural representations. Anthropocentric, capitalist and speciesist discourses are considered ambivalent or destructive as they correspond to discourses that potentially have

negative impacts on how NHAs are represented and/or treated. Beneficial discourse mostly concerns how NHAs are represented in terms of positive outlook, and how they are positioned in the household/family social locus (distanced or close). Ambivalent discourse does not lean significantly towards either positive or negative representations but can include anthropocentric perspectives.

Another emerging point is how there are multiple intermeshing of different aspects of discourse, such as cultural knowledge, academic knowledge or personal experiences. This implies that the construction of representations and attitudes towards NHAs is the confluence of numerous, heterogeneous factors. The cultural aspect is particularly significant across the accounts gathering episodes, and represents different types of discourses, ranging from destructive to ambivalent. The elements of culture also revealed that one type of discourse can be constructed from another type. For example, the beneficial discourse of prosperity associated with pigs in Chinese culture is based on an intrinsically destructive anthropocentric discourse of exploitation and farming.

Anthropomorphism also appears to be an important aspect in how the participants have constructed their representations of NHAs and is often accompanied by the element of transmediation. The participants have been exposed to anthropomorphic NHAs in different media, including books, comics and cartoons, and this has forged how they construct their representation of NHAs in terms of beneficial discourse. This is significant for this study as it demonstrates that anthropomorphism has a positive impact on discourse and may be of value in establishing ecologically responsible activities.

One of the most significant elements emerging from this episode of accounts gathering is the fundamental importance of first-hand experience in the construction of representations and relationships with NHAs. Such direct experiences have also been shown to transcend

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transmitted representations, as in the case of one participant who moved from an anthropocentric ambivalent discourse, during childhood, on dogs as guards, to a beneficial discourse of dogs as family members. The importance of first-hand experience was also notable in the other three accounts gathering episodes as well as in the interviews with children in Chapter 6. The importance of such experiential opportunities for construction of knowledge about the biosphere and representations of NHAs is significant to include in on-going reflections related to the model of curriculum development for Research Question 5.

## 7.11 ACCOUNTS GATHERING EPISODE 2 QUESTION 1: PERSONAL RELATIONSHIPS WITH NHAS

There were four participants in accounts gathering episode 2 (see Appendix QQ) and their profiles were that of academics who have participated in textbook writing and curriculum development. The emergent themes related to Question 1 for this second group accounts gathering episode are detailed below.

### 7.11.1 *The importance of first-hand interactive experience*

When responding about their relationships with NHAs, all three participants who chose to respond spoke about the importance of direct, first-hand experience. For clarity I will refer to the participants as R1, R2, R3, and R4, though the latter did not respond to this question. For R1, his representations and relationship with NHAs were largely constructed as a result of direct experiences as he "cannot imagine" his "life without them". For R3, he frames dogs as family members and compares them to children, stating his own long experience with having NHAs. Interestingly, even though R2 does not "have any pets at home", he questioned the validity of his response based on this premise and stated that he likes NHAs nonetheless. In this case, all three responses appear to be articulated around a beneficial discourse that is the result of direct interactions with NHAs.

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## 7.12 ACCOUNTS GATHERING EPISODE 2 QUESTION 2: PERSONAL SIGNIFICANCE OF NHAS

Affective bonding was an emerging theme for this group in relation to the second accounts gathering episode. Both R2 and R3 supported their statements by sharing how they directly engaged with NHAs. While the former cited how dogs behave and how they "return affection", the latter explained that he had "conversations" with his pets. R1 also mentioned having to "live in order to be able to explain" the significance of NHAs, twice. However, he also mentioned the 'interchangeability' of cats, in the statement that "when one dies, you have another one in the afternoon". While this appears to be somewhat contradictory to the emotional aspect highlighted by the participant, it could also have been a way to explain how cats are present in his life. In all three responses, therefore, the discourse remains beneficial as a function of being rooted in first-hand experiences.

## 7.13 ACCOUNTS GATHERING EPISODE 2 QUESTION 3: CULTURAL SIGNIFICANCE OF NHA REPRESENTATIONS

This question is explicitly articulated on cultural significance in relation to Research Question 4. One participant explained his behaviour and attitude towards dogs as a function of general cultural assumptions related to dogs being viewed as impure among Muslims, because there is a common assumption that touching dogs requires the person to perform ablutions again. Even though the participant plays with his cousin's dogs, he will not let them touch him as a consequence of this cultural assumption. For another participant, he attached cultural significance to the elephant, which is representative of a deity in the Hindu pantheon, named Ganesh. He has many statues representing elephants and shared an emotional bond with them as a result of this cultural presence. The participant liked butterflies too as they represent childhood memories, a time when he used to play outside, where there were many butterflies. The discourses are mixed and reveal how cultural symbolism can influence a person's

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representations of NHAs; one participant's behaviour was constrained by ambivalent discourse towards dogs, while another participant attached emotional significance to elephants as a result of beneficial discourse around this NHA in his cultural knowledge.

## 7.14 ACCOUNTS GATHERING EPISODE 2 QUESTION 4: EXPRESSIONS AROUND NHAS

One participant explained his profound dislike of the adjective 'bitchy', which is a speciesist expression. Upon prompting, he further evoked a common speciesist use of 'bourik' (donkey), which makes him "laugh a lot, [as] whenever someone is stupid, he [his relative] will say 'bourik'". As for another participant, he mentioned the comparison with cats and dogs to explain that his sister and he fight like "cats and dogs". Such speciesist discourses mentioned reflect a form of destructive discourse and indicate that speciesist expressions related to NHAs are part of the Mauritian cultural context and biosphere.

## 7.15 ACCOUNTS GATHERING EPISODE 2 QUESTION 5: ELEMENTS WHICH INFLUENCED OPINIONS ABOUT NHAS

This question was articulated around learning and opinions, and allowed for more leeway in the types of responses, which were relatively heterogeneous as they concerned cultural knowledge, lived experiences, media, transmediation and an emerging theme of 'implicit cultural didacticism'. One participant called upon the importance of religious and cultural teachings, which largely represent how the participant acquired knowledge about NHAs, via "myths, legends and epics". According to the participant, Hindu culture taught him the veneration of certain NHAs, though he admits he is scared of some, such as insects.

A second participant in this group maintained focus on lived experiences in the formation of opinions and a third participant articulated his response around media, mentioning the construction of knowledge and representations about NHAs through a TV serial titled

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'Rex', which led to him liking the German Shepherd dog and the Husky dog. As for the participant who discussed the religious and cultural teachings, he explained that the experience of the death of his two cats taught him a lot and made him realise the void they left, and how important they had been in his life. This statement further encouraged me to interrogate the didactic value of lived experiences with NHAs, as lived experiences were a significant contributing factor to the formation of ecologically beneficial discourse and NHA representations for this second accounts gathering and the first episode too.

## 7.16 ACCOUNTS GATHERING EPISODE 2 QUESTION 6: SIGNIFICANCE OF BOOKS, STORIES OR LEARNING EXPERIENCES WITH RESPECT TO NHAS

For this question, only one respondent stated that *Winnie the Pooh* was a significant book; this may be due partly to the participants' lack of exposure to CL books and texts with NHA characters. Despite being directly involved in textbook writing, and recognising that NHAs are important for children, which is mentioned in examples below for questions 7 and 8, the other three participants did not identify any books, stories or experiences relating to NHAs that were worth mentioning. This may relate to the perception according to which NHAs are didactically instrumental in the conception of textbooks and are viewed as 'objects' to facilitate the learning of topics rather than for developing ecological responsibility or literary connections with NHAs. It also reveals that textbook writers may not sufficiently consider the potential impacts of NHA representations in CL or CL-related texts for children, as they did not have significant memories or learning experiences of their own.

## 7.17 ACCOUNTS GATHERING EPISODE 2 QUESTION 7: RELATIONSHIP WITH NHAS AND PROFESSIONAL PRACTICE

Only one participant responded to this question and the response related to an emerging theme of the didactive relevance of NHAs for young children, as he stated that educators know that NHAs are an important theme, especially when it comes to teaching very young children. This participant did not respond to question 6 but stated here that "kids love animals" and there is the "appeal of animals for kids". Beyond the teaching of vocabulary, the participant also mentioned how it is important not to be cruel to NHAs and to take care of them which supports the assumption that NHAs are appealing to children. The participant's response also highlighted the importance of beneficial discourse in curriculum material and NHAs are given salience as there is recognition from this textbook writer that NHAs 'appeal' to children and are therefore worthy of inclusion in textbooks and curriculum materials.

## 7.18 ACCOUNTS GATHERING EPISODE 2 QUESTION 8: IMPLICATIONS OF NHAS IN CURRICULUM OR TEXTBOOK WRITING

The same participant for question 7 responded and pursued his argument from the previous question. He mentioned the important presence of NHAs in textbooks and stated that "all textbooks we have written have animals in them". This implies that textbook writers give salience to NHAs and consider them important for inclusion in children's curriculum materials, but do not necessarily consider the ways in which they are represented. It also implies that the textbook writer did not mention any books or learning experiences related to NHAs as being significant for him but recognises the potential value of NHA representations in materials that children read and use in the teaching and learning process. Beyond the teaching of vocabulary, the participant also mentioned the axiological aspect in terms of the teaching of values and how to care for NHAs.

## 7.19 ACCOUNTS GATHERING EPISODE 2 QUESTION 9: FURTHER ENCOUNTERS WITH ELEMENTS AROUND NHAS IN THE EXPERIENCE OF TEXTBOOK WRITING

Two participants highlighted the challenges around the use of NHAs in curriculum material. One was aware of the representations around specific NHAs in the Timatou materials and anticipated the constraints leading to the replacement of the characters. The participant shared that the tenrec was replaced by the tortoise and this affected the whole book, including stories where the textbook writer had written that "the tenrec was very rapid, agile ...". These characteristics were no longer applicable to the new tortoise character. This is a valuable example which illustrates how cultural tensions not only led to the erasure of the tenrec, but also profoundly modified the 'physiognomy' of the textbook. Another participant interpreted these difficulties that had been shared and related them to representations in terms of a paradox, that the negative representations from adults do not correspond to the strong presence of NHAs in children's lives, notably through transmediation.

## 7.20 ACCOUNTS GATHERING EPISODE 2 QUESTION 10: IMPACT OF NHAS IN TEACHING EXPERIENCE

One participant reported tensions between the ideological posture of a panel member and the content of the textbooks, regarding veganism; this led to management issues as the ideological argument affected textbook writing. This illustrates how the ideologies of panel members involved in writing textbooks can directly impact on the content that is chosen for inclusion or exclusion, and how such content is represented; this reinforces my argument of how representations of textbook writers and curriculum developers function as an interposition between pupils in school and the materials themselves.

One participant mentioned how NHAs are represented and described differently in science textbooks, which were not "too humane compared to how we would represent animals in textbooks in languages". This was significant for him and it is also significant to this doctoral study as it raises the question as to how NHAs are represented in different subject areas and for which purpose. Additionally, this observation from the participant corroborated with the previous study I was involved in which showed that NHAs were represented with anthropocentric, and therefore ecologically destructive, discourse in pre-reform science textbooks, which focused on the utilitarian 'functional value' of NHAs (Oozeerally & Hookoomsing, 2017).

## 7.21 SYNTHESIS OF ACCOUNTS GATHERING EPISODE 2

Figure 11 below provides a visual synthesis of the main findings and discussions of the second accounts gathering episode. In this second episode, the notion of first-hand experience once again appeared to be significant, notably in how the experiences constrain the relational dynamics with NHAS and the representation of them as well. In one case, the experience of the death of two pets had a profound cultural didactic value and led the participant to learn lessons about life. Due to the importance of this aspect in how participants construct representations and knowledge, first-hand experience is categorised as empirical encounters.

Another aspect which emerged in this second episode was the unanimous declaration by the participants that NHAs are very present and important in the learning trajectories of young children, not only because children like NHAs, but because they encounter mostly beneficial discourses around NHAs through transmediation in books, cartoons, comics, films and so on. Participants also explicitly mentioned that it is important to encourage beneficial discourse in regard to NHAs, beyond the strictly functional curriculum purpose.

The cultural dimension was also highlighted as an important aspect. It led to either ambivalent or beneficial discourse with respect to individual participants. However, participants agreed that when it came to curriculum textbook writing, the cultural aspect was more difficult to align with the original writing ideas and curriculum material choices regarding NHAs. An additional emerging aspect relates to the axiological dimension and how NHAs are represented differently with respect to separate subject areas, which could be an area to take forward in future research.

**Figure 11**

*Synthesis of Accounts Gathering Episode 2*
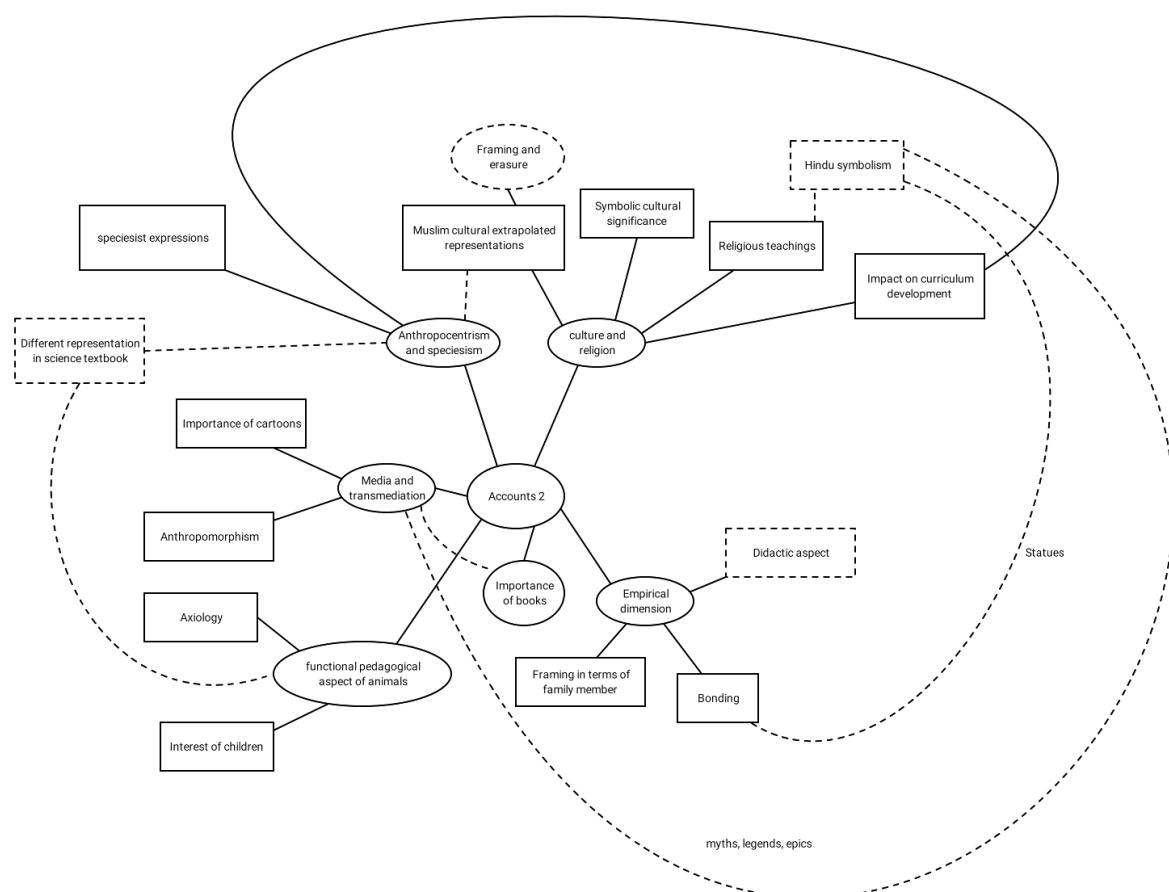
## 7.22 ACCOUNTS GATHERING EPISODE 3 QUESTION 1: PERSONAL RELATIONSHIPS WITH NHAS

There were two participants in accounts gathering episode 3 (see Appendix RR) and their profiles were that of academics who have participated in textbook writing and curriculum development. The significant theme in relation to Question 1 for this third group accounts gathering episode was the importance of first-hand experience in establishing and shaping personal relationships with NHAs. For clarity, the participants in this episode will be referred to as R1 and R2.

Both participants mentioned the importance of first-hand experience in their construction of their personal relationships with NHAs. R2 however stated that he is "not very intimate with animals" despite having had NHAs as pets and still keeping dogs as pets. He currently "owns" a dog and contrary to his children, who "hug [it], feed [it] and [bathe] it", he does not touch the dog and does not feel comfortable with it. As for R1, he mentioned his experience of having "owned" a pet dog, losing it through accidental strangulation, and this having had a profound impact on his decisions regarding keeping dogs as pets. He also mentioned his fears about cat, which emanate from an experiential encounter during childhood, where the "cat would scratch [his] feet. And blood would start oozing out[…]". This frames the cat as an aggressive NHA and was the main factor influencing the decision of his family not to own a cat anymore. Interestingly, the cat was present in their lives as a pet through an anthropocentric 'function' because they had a family shop, and they kept the cat to control rats. In this response, cats are framed as functional pets and killers of rats, meanwhile rats are presented as pests who need to be 'controlled' and killed. Though not ecologically destructive, the discourse appears to be anthropocentric and ambivalent, notably through the framing of the two aforementioned NHAs.

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## 7.23 ACCOUNTS GATHERING EPISODE 3 QUESTION 2: PERSONAL SIGNIFICANCE OF NHAS

Personal significance of NHAs was mixed with cultural symbolism for the participants; both shared their representations of lizards and R2 stated that he will "need to take a shower" if a lizard falls on him. The fact of taking a shower can also be related to ritual cultural or religious practices of purification. Hence, it can be argued that the participants consider the lizard as having dirty or negative properties which would lead to the necessity of taking a shower as a cleansing ritual.

R2 also talked of the significance of symbolic representations from the lens of his identity as a Hindu, citing the example of the cow as a significant figure. According to him, "Hindus are expected to feed the cows for […] prosperity, for good health, and so on, and specific reasons". He added that the cow "becomes important then when [they] conduct certain prayers at home". Additionally, he explained that dogs and birds represent "certain characters in Hinduism" and consequently, Hindus are expected to keep some "food aside for birds […] and dogs as well". However, he adds that even though the snake "has always been associated with the god Shiva", he is scared of snakes and explains that *koulev* (which is a type of small non-venomous local snake in Mauritius) is regarded "as a bad omen". This appears somewhat contradictory due to the cultural association of the snake with the previously mentioned Hindu deity. This opened avenues for interrogating how far personal or socially constructed representations of certain NHAs sit with cultural or religious knowledge pertaining to them. Upon prompting from the interviewer, R1 consolidated the fact that *koulev* is a local snake and despite their beliefs, he "never noticed anything bad happening"; this indicates that the participant takes the socially constructed 'bad omen' representation into consideration but relays it to lived experiences in order to decide whether or not there are correlations.

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The elephant is another significant NHA mentioned by the two participants as it is associated with the Hindu deity Lord Ganesh.  In relation to the religious dimension of the Hindu pantheon, R2 further added elements on the cow:

*We do a lot of prayers so we would never eat it. We never think about it. It's sacred. We do a lot of prayers to make sure we respect it. And that's important.*

The discourse, with respect to both participants, is globally ambivalent. Beneficial discourse is largely articulated around the cultural significance of the NHAs, notably through representations in religion. However, discomfort and personal fears came up in the discussions, as did an emerging theme of socially- constructed superstitions that are directed towards snakes and lizards.

## 7.24 ACCOUNTS GATHERING EPISODE 3 QUESTION 3: CULTURAL SIGNIFICANCE OF NHAS

Both participants situated themselves within the cultural semiotics nexus in the sense that their responses were articulated around cultural significance rooted in religion. R1 stated that the monkey "represents *Hanuman*", another Hindu deity, while R2 refers to the element of transmediation, citing a BBC documentary to support the fact that monkeys are left untouched in India. The latter representation is inferring that monkeys being 'untouched' by humans is at least partially the result of how monkeys are culturally significant in a Hindu-majority country. The cultural dimension, through religion, seems to be dominant and transversal to the discourse of the participants; it is a recurring theme in their responses and has been noted in the examples based on the principle of distinction and the nuanced representations that are bound within the discourse and language choices the participants have made within that specific time and space of the accounts gathering episode.

## 7.25 ACCOUNTS GATHERING EPISODE 3 QUESTION 4: EXPRESSIONS AROUND NHAS

The participants shared thirteen different expressions (see Appendix RR). Out of all the expressions cited, ten encompassed destructive discourse through speciesism and seven expressions were in English, though the participants were given the prompt that responses may be in English, French and Kreol Morisien. This illustrates that the participants are aware of NHA representations in common colloquial expressions within the Mauritian context and that more than two thirds of the expressions were examples of ecologically destructive discourse directly linked to speciesism.

## 7.26 ACCOUNTS GATHERING EPISODE 3 QUESTION 5: ELEMENTS WHICH INFLUENCED OPINIONS ON NHAS

By calling upon knowledge derived from the expression "the dog is the best companion of man", R2 returned to his own experience of dogs, with reference to his pet when he was younger. He produced a metalinguistic reflection by stating that he did not use the pronoun 'it' to refer to the dog but the pronoun 'he' instead, using a grammatical device that 'personalises' his dog, who "was really like a companion" for him. From this framing, he moved on to reflect about the element of empathy, stating that "the dog also has feelings for human beings". This represented a form of beneficial discourse based on first-hand experience and direct knowledge of the NHA in question, which took the status of an actual companion. This links back to the representations of NHAs in the textbooks discussed in Chapter 5; there too I found examples of discourse that could potentially encourage empathy and reflection on NHAs as companions.

For R1, the religious argument resurfaced, and he explained how religious teachings orient his behaviour towards NHAs, stating that he will not "go out of [his] way to hurt an animal". He also explained that despite not feeling close to his dog, he makes sure the NHA

"gets everything". R2 also revisited his statements and described his own actions of feeding stray dogs. The same theme was taken up by R1 who mentioned that despite their family's vegetarianism, and one family member's intolerance of the smell of meat, they still make sure that their dog "has his quota of meat". This indicated a level of alterity for both participants, in terms of considering the needs and 'feelings' of the NHA, especially in the case of R1, where he makes sure that the needs of his puppy are catered for, despite the discomfort of one family member. The discourse is generally beneficial in regard to dogs, with the framing of the NHA as a pet, a companion, and also salient in their lives. However, the discourse towards lizards and cockroaches is distinctly destructive and R2 states that he "usually kills the cockroaches" when he sees them because he is "so fussy about cleanliness."

The inference is that lizards and cockroaches are either dirty or bring dirtiness into the home, and in both cases, the discourse is speciesist and the actions taken are fundamentally destructive in nature. In terms of further reflections which are beyond the scope of this present study, this example caused me to consider the possibility of a hierarchical classification in terms of the 'closeness' humans feel towards different NHAs. For example, it could be that this participant and others feel closer to mammals than to insects, fish, reptiles, or mollusks; this could be partly linked also to the types of representations that exist in various media related to non-mammal NHAs. Another factor could also be the many shared characteristics between human and non-human mammals and the ability that mammals have to respond in acknowledged human form.

## 7.27 ACCOUNTS GATHERING EPISODE 3 QUESTION 6: SIGNIFICANCE OF BOOKS, STORIES OR LEARNING EXPERIENCES WITH RESPECT TO NHAS

In relation to this question, an additional prompt question was provided so that one participant could elaborate further on any book or story in particular about the wolf that he had mentioned earlier. R2 mentioned the important presence of story books throughout his life and how they "helped [him] think about certain things". He reflected on his reading about the wolf in stories, explaining that it is "necessarily aggressive" and that it represented an NHA that he "needs to be scared of". In both instances, he used an air-quotation hand gesture, implying a metalinguistic level of reflection. His use of the adverb 'necessarily' as well as the modal 'need' is valuable in this context as it demonstrated how information about NHAs conveyed and transmitted in storybooks can have an impact on how the child constructs his/her knowledge and representations of NHAs (Stibbe, 2015). In this case, the wolf is depicted as a serial villain, pointing to a destructive discourse which was also visible in the previous data sets for CL and textbook analyses.

R2 further explained how the book "*Le Petit Prince*" by Antoine de Saint-Exupéry, had an "impact on" him and had a profound cultural didactic value, as the book was "mainly on the principles of life" and it "moulded a bit some of [his] principles". The book in question features a talking fox who participates in meaningful dialogue with the main character, notably in relation to the underlying holistic philosophy of the story. Upon prompting from the interviewer about representations of the wolf, the participant noted that the stories which depicted the wolf as a villain were the Little *Red Riding Hood* and the *Three Little Pigs*. R1 also referred to his academic knowledge acquired while studying *Animal Farm* by George Orwell, which "changed [his] perception" because it allowed him to "think about animals as human beings". This change of perspective was interesting in relation to the potential impacts

of anthropomorphism because the likening of humans to NHAs had the effect of altering how the participant viewed NHAs in a more positive light, through empathy, thus contributing to the construction of beneficial discourse about NHAs.

This same type of reflection noted in the response of R1 can be applicable to the notion of anthropomorphism in general, which by its nature bridges the ontological gap between humans and NHAs. As demonstrated in accounts gathering episode 1 also, anthropomorphism was a major contributor in how the participants constructed beneficial discourse and representations of NHAs. R1 also cited *Alice in Wonderland* by Lewis Carroll and another book around the dodo in terms of how the anthropomorphic representations of the NHA characters created a shift in his perspective of the NHAs, and religion re-emerges as a theme in his own discourse. R2 subsequently reinvested the discussions around *Animal Farm* and, by grounding his statements in his own experience, explained how the perspectives of a child and an adult differ in the interpretation of meaning of the text. He used the examples of irony and sarcasm, which are present in the text and are better understood through the filter of adulthood.

R1 reoriented the discussion around the Mauritian context, stating that "pigs are supposed to be dirty and especially for Hindus you don't eat them". Reusing the example of *Animal Farm*, he stated that his own prior "horrible notion that [pigs] are dirty and smelly" changed through reading the book and helped him realise that they are "intelligent [and] cunning". This segment demonstrated the importance of books as well as academic knowledge in contributing to the construction of representations of NHAs, as well as providing some examples of beneficial discourse. In both cases, two significant books helped the participants transform prior knowledge, configured around destructive discourse, into beneficial discourse. It also illustrated the importance of literature in shaping representations and the potential impacts of textbook writers' representations of NHAs as interpositions between the children who are intended to learn from textbooks and the content that is actually included in the

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materials. For example, a textbook writer who views pigs as intelligent and cunning compared to dirty and smelly, may be influenced by this in terms of their choice of textual and visual discourse related to representations of the pig in the didactic materials they produce.

Similar to accounts gathering episode 2, both participants agreed that NHAs are very much present in education, especially primary schooling where R2 stated that they are "dealing with animals or teaching animals as a theme." NHAs are considered by R1 to be pedagogically relevant and important in attracting the interest of children; consequently, when they "write textbooks also, [they] try to use animal characters". The 'functional' and didactic value of NHAs is highlighted and corresponds to the reflections of other participants in the general accounts-gathering process.

## 7.28  ACCOUNTS GATHERING EPISODE 3 QUESTION 7: RELATIONSHIP WITH NHAS AND PROFESSIONAL PRACTICE

R2 mentioned an anecdote which is particularly relevant to this study, notably because it corroborated with the reflections of participant R1 in accounts gathering episode 1. His anecdote is as follows:

> *I remember one specific situation, but I don't know if it's relevant to the question, but I want to mention it. I never knew that Muslim people wouldn't even mention the name pigs because it's considered as being… Taboo or dirty or I don't know what's the relationship, but I remember when I was teaching Animal Farm that one of the students didn't want to use the term pig and they said that using the term pig is not allowed in their religion… something like that, but I'm not very sure.*

This corresponded to accounts gathering episode 1 in relation to R1's statements about how pigs are perceived in his household and his immediate surroundings. In both cases, the pig

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is the object of ambivalent or destructive discourse as the NHA is represented as dirty. Similar extrapolations are noted in R2's experience in accounts gathering episode 3, as his student perceived the pig as a taboo and further extrapolated Quranic teachings to make a statement about what the student believed was 'not allowed'. The potential impact of such representations of the pig are linked to erasure (Stibbe, 2015) and the exclusion of the pig from a student's life based on religious assumptions and beliefs.

As for R1, he recounted his teaching experience in the UK, where he asked students to write poetry. His choice of the topic of NHAs was intentional and he expected "nicer responses". His expectation was based on the assumption that children were naturally interested in NHAs and would therefore be more invested in the task. The participant felt this was confirmed through the high engagement levels of his students, who "would research on it [and] would bring photos of them, their pets". This consolidates the importance of NHAs, especially first-hand experience of pets, in shaping the representations and reflections of children.

## 7.29 ACCOUNTS GATHERING EPISODE 3 QUESTION 8: IMPLICATIONS OF NHAS IN CURRICULUM OR TEXTBOOK WRITING

This question was focused on the participants' choices as curriculum developers and textbook writers and both shared similar reflections on the importance of NHAs, not only in terms of pedagogy but also for the development of creativity and empathy, as well as a motivating factor for children. R2 referred to his experience with Timatou in the Foundation Year Project (FYP), mentioning that the presence of NHAs was a calculated choice, intended to "accompany the kids" in their learning trajectories, based on the children's "affinity for animals". Consequently, he had difficulties in understanding the criticisms received. R1 also mentioned the Grade 4 English textbook, which hardly had any NHAs; with hindsight, he stated that the panel could have explored the use of NHA characters, given how relevant they are to children. In terms of

their pedagogical value, relevance and interest for children, NHAs were the object of beneficial discourse from both participants.

## 7.30 ACCOUNTS GATHERING EPISODE 3 QUESTION 9: FURTHER ENCOUNTERS WITH ELEMENTS AROUND NHAS IN THE EXPERIENCE OF TEXTBOOK WRITING

There was an opposition between pedagogical purpose-driven knowledge and 'cultural taboos' in this third episode, as well as all other accounts gathering episodes. The tenrec and the pig, for instance, appeared in R2's reflections around the ethnoculturally motivated criticisms towards the FYP. His appraisal was that these criticisms were factually inaccurate and therefore unfounded. Hence, the pedagogical purpose of the pig and tenrec were overshadowed by the cultural taboo surrounding them and impacted on the curriculum development choices made; in accounts gathering episode 4 below, in section 7. 32, the participant explained these issues boiling down to 'culture'.

R1 also mentioned the issue of cultural sensitivity as the same content about NHAs may not necessarily be perceived in the same way depending on the cultural dynamics of a society or country. Upon prompting from the interviewer, he elaborated as follows:

> *When you think of Mauritian culture you think it's divided into different communities and each community has its values, traditions, religion, and it's all connected… And you're writing a textbook and you forget about these little subsets and you don't realise it is so complicated.*

The complications associated with the complex ethno-cultural social tapestry of Mauritius are also cited in the other accounts gathering episodes. R1 believed that "animals is [sic] not explored enough" and explained how the topic of NHAs in literature is "very fixed" and concerns linguistic and stylistic features, without necessarily having ramifications in other

aspects of his life. He also explained how participating as a respondent in this present doctoral study stimulated his thoughts about different aspects of NHAs.

On a concluding note, though it was unrelated to the question 9 specifically, R2 added that his experience of encountering a giraffe led him to compare it to a model, owing mainly to its slenderness, tallness, and posture. This led the participant to think how NHAs have "their own cuteness, their own beauty, their own attractiveness and so on". This final point relates to the recognition of intrinsic values of NHAs in contrast to speciesist or anthropocentric discourse; it is also comparable to the responses of children in Data Set 3 in terms of what are the physical attributes associated with NHAs that encourage representations related to beauty.

## 7.31  SYNTHESIS OF ACCOUNTS GATHERING EPISODE 3

Figure 12 below provides a visual synthesis of the main findings and discussions of the third accounts gathering episode. In this third episode, the notion of religious beliefs and assumptions in relation to first-hand experience appeared as a prominent theme. Many of the participants' responses were anchored in their construction of knowledge related to religious and cultural didacticism.  Due to the importance of this aspect in how participants constructed representations and knowledge of NHAs, religious teachings became as important as first-hand experience for establishing beneficial discourse and less anthropocentric understandings of NHAs and the biosphere.

Once more there was a unanimous declaration by the participants that NHAs are very present and important in the learning trajectories of young children. The two participants also mentioned a number of books and texts that had significance for them in terms of developing their representations and understandings of NHAs and the world around them. Each book and story served a particular function in shaping their representations and showed how literature and learning materials, whether in the form of textbooks or prescribed literary texts for study,

can impact on children's constructions of knowledge about culture and the biosphere. The stories and representations of NHAs therein contributed to shifting the participants' views and enabled them to expand their understandings. Figure 12 below provides a visual synthesis of the main results of accounts gathering 3.

**Figure 12**

*Synthesis of Accounts Gathering Episode 3*
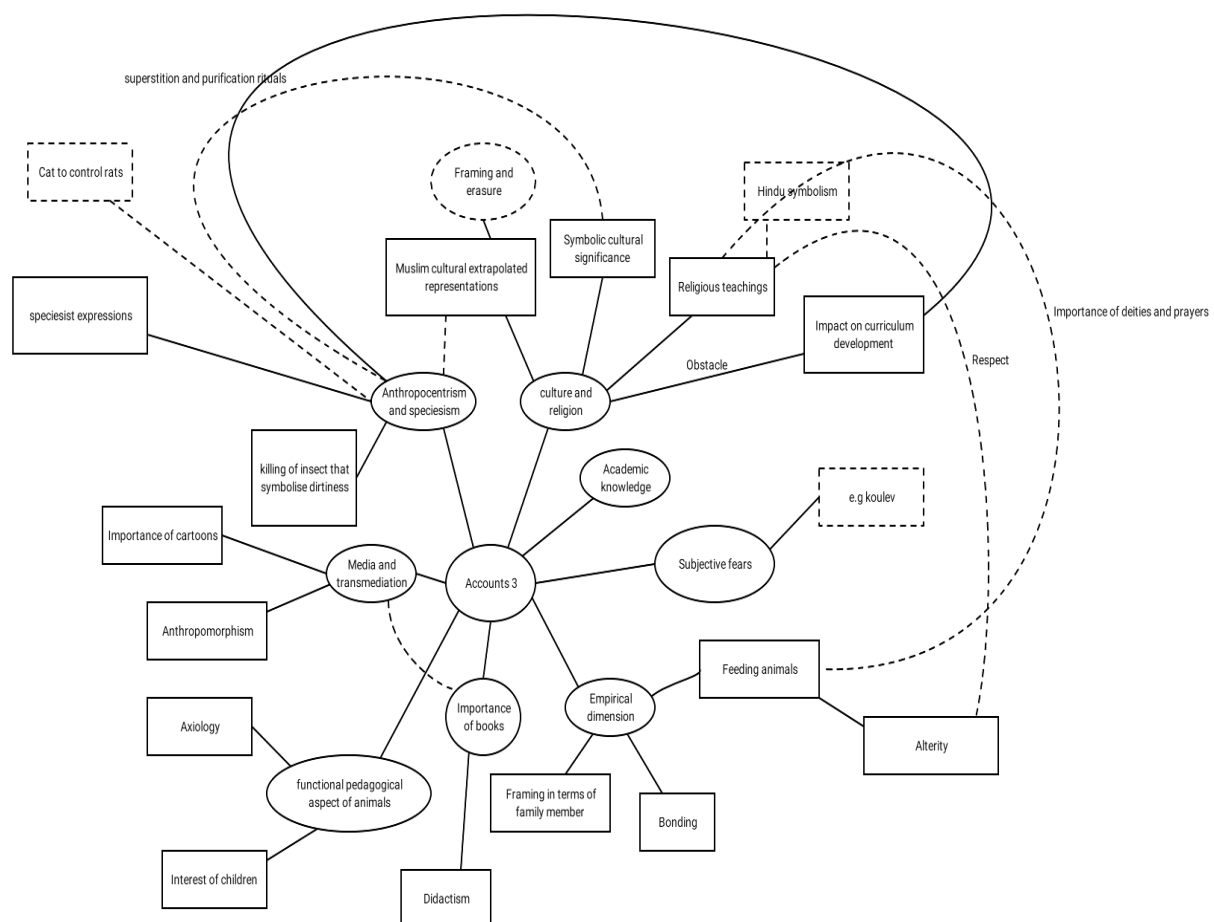


## 7.32  ACCOUNTS GATHERING EPISODE 4

There was only one participant in accounts gathering episode 4 (see Appendix SS) and the profile of the participant was that of a curriculum developer involved in curriculum

coordination. The sections below present detailed examples of some of responses, as they provided deeper insights into the issue of NHA representations and curriculum. This is followed by a visual synthesis and a summary of the main findings and discussions for accounts gathering 4 in section 7. 39.

## 7.33 ACCOUNTS GATHERING EPISODE 4 QUESTIONS 1 AND 2: PERSONAL RELATIONSHIPS WITH AND SIGNIFICANCE OF NHAS

The responses of the participant converged towards beneficial discourse in citing his relationship with NHAs, which was at least partially rooted in his first-hand experiences with respect to his German Shepherd dog "at home". The participant shared his personal relationship with dogs who "can be a friend […] at home"; framing the dog as a friend and as a close member of the household points towards beneficial discourse, which is also found in his general representation that "all animals are significant". He also stated the symbolic value of NHAs, which is also significant across all the accounts.

## 7.34 ACCOUNTS GATHERING EPISODE 4 QUESTION 3: CULTURAL SIGNIFICANCE OF NHA REPRESENTATIONS

The participant produced a generalised statement according to which "everything is cultural", meaning that all systems of meaning are grounded in cultural knowledge, either directly or indirectly. From this premise, he stated that NHAs are "also symbols" and "form part of the whole culture". He also cited books as a medium where NHAs are very present, and linked different aspects like didacticism, cultural knowledge, and axiology. He wove his statements in a form of beneficial discourse in reiterating their presence in books and their fundamental role in "developing certain values" as well as their presence in education. His final statement, according to which "they are, in a way, culture", is relevant to my thesis as it further delved into explorations pertaining to the inextricabilities between NHAs and culture, pointing

towards even further interrogations on the disarticulations between the biosphere and noosphere, which I discussed in Chapter 2.

## 7.35 ACCOUNTS GATHERING EPISODE 4 QUESTION 4: EXPRESSIONS AROUND NHAS

Regarding different expressions, colloquialisms, and idioms involving NHAs, the participant mentioned expressions in French and one in Kreol Morisien:

> *Faire un temps de chien* [literal meaning is 'a time/period of dogs', expression meaning 'rotten weather']

> *Rusé comme un renard* [cunning as a fox]

> *Bondit comme un chat* [leaps like a cat]

The first two expressions are speciesist in nature and involve the transposition of perceived 'negative' NHA traits to a human or a situation; the discourse is therefore destructive as it reveals prejudice towards the NHAs who do not necessarily embody or exhibit those perceived negative connotations. The third expression he mentioned was analogical as it simply referred to how a cat leaps. The participant also added a KM expression:

> *Labous kabri… So labous kabri* [goat mouth… he has a goat mouth]

This expression is also speciesist as it refers to a person whose ominous statements or predictions become true. In this sense also, the expression converges towards destructive discourse about goats as predictors of misfortune, and a common variation of this expression is 'lalang kabri' [goat's tongue].

## 7.36 ACCOUNTS GATHERING EPISODE 4 QUESTION 5: ELEMENTS WHICH INFLUENCED OPINIONS OF NHAS

The participant referred to his own personal experience with NHAs, including pigs, dogs, and cats, from his early childhood. This first-hand exposure and experiences led the participant to frame them as 'friends', and stated that from "years three to five, they were in [his] life". This is relevant in the context of this study as the participant not only concurs with the others during different accounts gathering episodes, but explicitly and reflexively stressed how the experience of encountering NHAs from early childhood helped him develop a form of beneficial discourse towards them. This is significant as it implies that the participant recognises the pedagogical value of ecologically responsible discourse and activities to support children in developing ecologically responsible representations of NHAs and the biosphere.

## 7.37 ACCOUNTS GATHERING EPISODE 4 QUESTION 6: RELATIONSHIP WITH NHAS AND PROFESSIONAL PRACTICE

NHAs were considered as fundamental in regard to the professional practice of this participant; curriculum design and development were deemed as sensitive practices and dependent on the choices of content that take into consideration the leaning of young children. Links were also established with cultural symbolism of NHAs and their implications on curriculum choices, especially through the direct reference to the complex inter-weaving of various social and cultural factors in the Mauritian context. Building on the dialectic between underlying ethnic tensions and the pedagogical instrumentalisation of NHAs, the participant expressed the need for research as being essential in providing deeper insights into the complexities of the Mauritian context. This doctoral study therefore corresponds to this need and provides a unique exploration of NHA representations in curriculum and early years primary education in Mauritius. The findings and propositions of this research could potentially feed forward into

informing curriculum development policy and practice in relation to ecologically responsible discourse, activities, and materials as part of the primary teaching and learning process.

## 7.38  ACCOUNTS GATHERING EPISODE 4 QUESTION 7: IMPLICATIONS OF NHAS IN CURRICULUM OR TEXTBOOK WRITING

The participant called upon his experience as a curriculum developer and explained that the 'Foundation Year Project' took into "consideration really how children learn", according to different factors including age and linguistic profile. Taking a retrospective perspective, he also reflected on the potential disarticulation between sociocultural expectations and the pedagogical choices operated in the textbook regarding NHAs. This links to the experiences and views of participants in accounts gathering episode 2, who mentioned that culture, instead of being an enriching factor, could be an obstacle.

## 7.39  SYNTHESIS OF ACCOUNTS GATHERING EPISODE 4

The rhizomatic diagram below (Figure 13) condenses the main thematic elements emerging from this fourth episode of accounts gathering.

The main themes emerging from accounts gathering episode 4 can be linked with the other three episodes as there are direct correspondences in the following:

- the prevalence of culture and religion,

- the importance of first-hand experience (empirical dimension),

- the role of books and media in the construction of NHA representations,

- reference to anthropocentric and speciesist expressions.

**Figure 13**

*Synthesis of Accounts Gathering Episode 4*
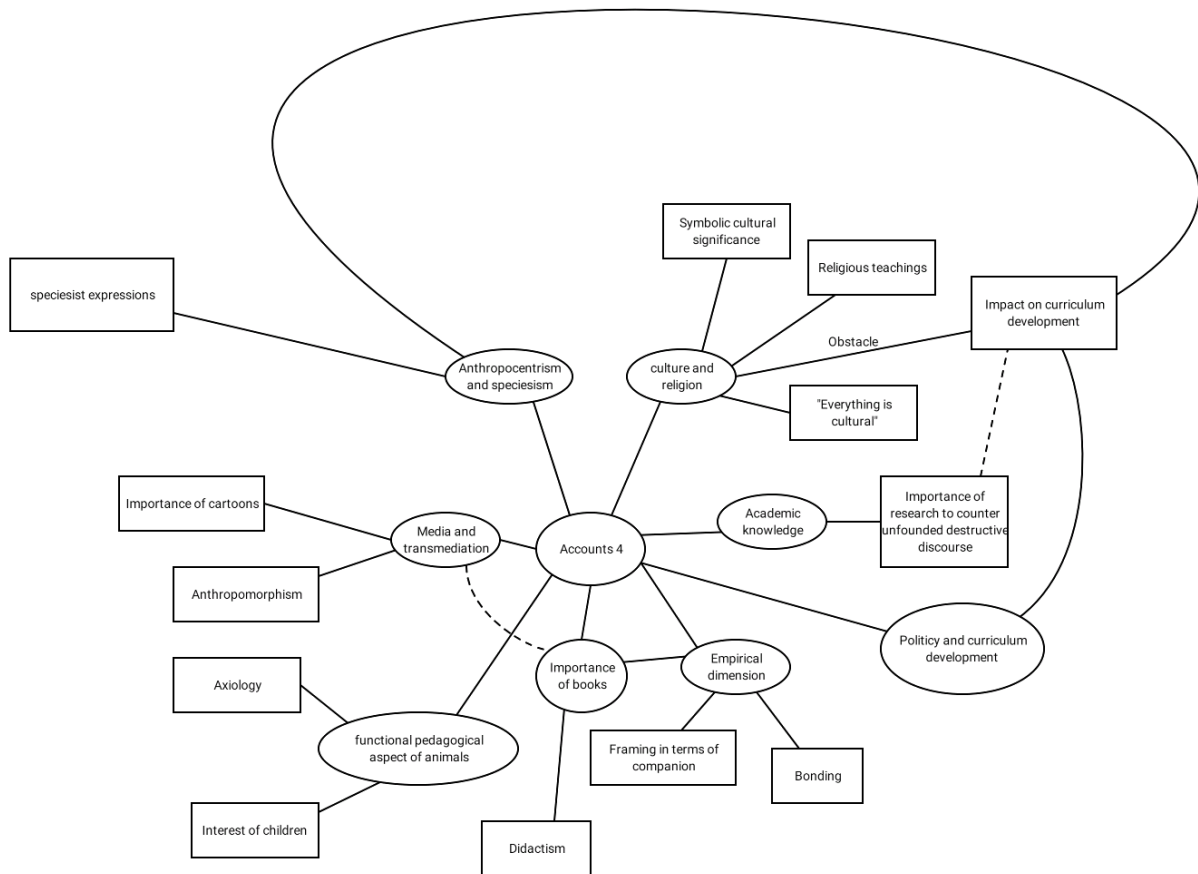


In this episode specifically, the importance of research as a mitigating device regarding destructive discourse was highlighted. The empirical dimension mainly concerned the framing of dogs in terms of companions and highlighted the affective bonding that influences the construction of NHA representations. The cultural dimension was foregrounded through the aspects of NHA symbolism and their cultural significance, particularly through religious teachings. According to the participant, these elements have an impact on curriculum development as well as policy decisions regarding curriculum. These impacts, however, can be an obstacle when they conflict with the pedagogical interests of the learners.

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The participant recognised the functional pedagogical dimension of NHAs, especially considering the interests of children. Books and stories were significant for the participant on two levels, in terms of childhood and parenthood. NHA characters in fairy tales were present in his experiences as a child and as a parent; the Brothers Grimm fairy tales were identified as having had an impact on how he built his representations around beneficial discourse with respect to NHAs. This links to importance of books and media in general which feature cartoons and anthropomorphic NHAs. The pedagogocial value and significance to children are often offset by cultural representations, which brought the participant to highlight the importance of academic knowledge and research in addressing these gaps and to counter ambivalent and destructive dicourse, in a context where "animals and ethnicities are stereotyped".

## 7.40  CHAPTER SUMMARY AND EXPLICIT CONNECTIONS TO RESEARCH QUESTION 4

The objective of the accounts gathering episodes was to elicit deeper experiential data from the participants who had a direct involvement in curriculum development and primary school language textbook writing. ECDA was used to analyse the data and the main findings and discussions were oriented around the emergent themes of (1) beneficial, ambivalent and destructive discourse, (2) cultural knowledge, (3) the importance of first-hand experiences and encounters for the development of empathy and affection,  (4) the accepted significance of NHAs in children's lives and for children's learning, (5) the importance of media and transmediation in the construction of representations of NHAs, (6) the impacts of implicit cultural didacticism, and the (7) recognised presence of anthropocentric and speciesist expressions in common and colloquial discourse.

The accounts gathering process was selected as one of the methodological trajectories for gathering data to respond to Research Question 4: What are the relationships between non-human animal representations in curriculum material and culture in Mauritius? The data responses gathered were rich and provided interesting pathways for reflection. The experiences of the participants revealed a culturally mediated paradox in how the issues of culture and multiculturalism and curriculum development are intermeshed in Mauritius. From the accounts, all the participants agreed that NHAs are important in the lives of children, given that the former are very present in different types of media, which foregrounds the notion of transmediation as discussed in previous chapters.

Drawing from their own experiences, the participants explained how anthropomorphised NHAs helped in the construction of their own beneficial discourse (Stibbe, 2014) as well as representations of NHAs. In terms of curriculum development, and curriculum material more specifically, the participants referred to Timatou and the FYP (see section 1.4.1 in Chapter 1) to explain how the recourse to NHA characters was backed by research in terms of children's engagement and affinity with NHAs. Beyond the development of curricular competencies, like grammar and vocabulary, NHAs were also the object of axiological teachings, especially in terms of developing attitudes and values of caring and empathy.

However, the actual experience of using NHA characters to develop curricular materials and textbooks was found to be a significant challenge to participants, due to the complexities of the ethno-socio-cultural matrix of Mauritius where multiculturalism could be an obstacle instead of an asset.

The importance of culture as a story (Stibbe, 2015) was present in the discourses of the participants. In accounts gathering episodes 1, 2 and 3 particularly, cultural knowledge as well as religion were the basis of how some participants represented NHAs and constructed their

relationships with them. For participants in accounts gathering 3, empathy through the values of respect and alterity gravitated around their cultural and religious beliefs and practices. Likewise, in accounts gathering episode 1, one participant merged his religious and cultural knowledge regarding NHAs with academic knowledge to construct deeper representations. This culturally-mediated beneficial discourse is contrasted by culturally-mediated ambivalent discourse or erasure (Stibbe, 2015) when, for example, participants in accounts gathering episodes 1 and 2 explained how their behaviour and actions or those of their surroundings, are conditioned by extrapolated cultural and religious knowledge.

To gain further theoretical insights on the prevalence of the cultural dimension in the representations and discourses of the participants in the accounts gathering, I used the representational model that I presented in Chapter 2 (see Figure 2 in section 2.6.1) to analyse part of the experiences gathered during the episodes (see Appendices PP to SS). The first observation is that many of the elements which emerged during a first analysis of the tenrec and the pig (see Appendix B), re-emerged in the analysis of the accounts. This demonstrated that the cultural representations, as lived and experienced by individuals, are observable in the choices that have been made in the curriculum context. Using the representational model and basing myself on the original analysis diagram for reference (see Appendix B), I created a visual analysis of the NHA representations in the accounts gathering data set (see Figure 14 below).

**Figure 14**

*Model of Cultural Representations of NHAs in Data Set 4: Accounts Gatheringeg*

Pig: [Muslim] NHA which is improper for consumption in Islam (anthropocentrism); Not worth considering, leading to erasure, avoidance, etc. Low anthropocentric-salience

Pig [Chinese]: High anthropocentric-salience; symbolically and economically meaningful

Dogs: [Muslim] High salience [personal] but tensions due to cultural teachings decreasing salience

Ox/Cows: [Muslim] High anthropocentric-salience: object of religious sacrifice

Snake: [Muslim] As in the pig - low anthropocentric-salience

Others: [Hindu] High anthropocentric-salience

Ox/Cows: [Hindu] High anthropocentric-salience

Snake: [Hindu] High anthropocentric-salience despite personal fears

Anthropocentric/salience

Expressed representations

Opinion

Ideology

Pig [Muslim]: Opinions based on interpretation of Islamic cultural restrictions (consumption; erasure; behaviour); Negative opinions based on ambivalent discourse

Pig [Chinese]: Positive opinion based on cultural symbolism and economic relevance. Positive opinion based on destructive discourse

Dogs: [Muslim] 'Ambivalent' opinions based on the tension between personal relationships and culturally transmitted information

Ox/Cows: [Muslim] Ambivalent opinions; symbol of sacrifice

Snake: [Muslim] Mostly negative opinions based on the religious symbolic dimension

Others: [Hindu] Mostly positive opinions based on religious and cultural teachings and representations

Ox/Cows: [Hindu] Positive, culturally, and religiously meaningful opinions

Snake: [Hindu] Mitigated/ambivalent; tensions between religious associations and cultural fears

Pig [Muslims]: Generalised ideology based on expansion of the opinion taken from Islamic restriction. Effect on behaviour: avoidance, erasure, expressions of disgust, equation to dirtiness [speciesism]

Pig [Chinese]: Symbolic meaning of prosperity based on anthropocentric aspects of exploitation and farming [anthropocentrism]

Dogs: [Muslim] Generalised ideology based on expansion cultural knowledge according to which dogs are impure

Ox/Cows: [Muslim] Symbol of cultural identity based on Eid-ul-Adha [anthropocentrism]

Snake: [Muslim] As in the pig, based on religious symbolism of the NHA having tempted Eve [speciesism]

Others: [Hindu] System of ideologemes anchored in representations constructed around beneficial, religiously meaningful discourse about NHA symbolism

Ox/Cows: [Hindu] Sacred figure

Snake: [Hindu] Associations with God Shiva but still the object of fears

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From the application of the model, it is evident that the main ideological elements which emanate from the participants' accounts of their culturally mediated heterogeneous experiences are directly linked to the formation of their opinions about NHAs. An emerging aspect is how some of the participants are conflicted between their own opinions and how they have been culturally educated. For example, during accounts gathering episode 3, one of the participants explained that despite the symbolic association of the snake with the Hindu god Shiva, he is still scared of the local *koulev*. The two vertices of ideology and opinion are related to the anthropocentric-salience vertex in the sense that they map onto how salient these NHAs are according to the respective cultural representations. The pig, for example, has low salience to Muslims as it is improper for consumption; in contrast, the same pig has higher salience for the Chinese community, given that it symbolises prosperity.

For Muslims, oxen and cows have a relatively high anthropocentric- salience as they are the object of religious sacrifice. In relation to the Eid-ul-Adha festival, these NHAs are anthropocentrically salient as they not only capture religious significance but also economic value. In general, cultural teachings embedded within Hinduism appear to converge towards a more 'harmonic' representations of NHAs, as the cultural, spiritual and religious ideologemes (Bang & Door, 2007) associated with NHAs in general, and more specifically to the cow and the snake, appear to encompass positive, beneficial discourse. A new reflection has emerged in light of the accounts gathering episodes on how the characteristic of 'ancient' religions and 'ancient' philosophical teachings may impact on representations of NHAs.

As a hypothetical reflection, I posit that the extent to which a noospheric system, such as religion, is historically 'ancient' impacts on how NHAs are represented within that system, in terms of spiritual meaning and value. For example, pre-monotheist religions or systems of belief, including paganism, shamanism, Aztec and Aboriginal systems of beliefs are more deeply rooted within and connected to the biosphere. In this sense, they are ontologically less

'non-anthropocentric' and converge towards a more harmonic, integrated perspective of NHAs and humans, through the recognition of the spiritual value of specific NHAs and plants. They are more grounded in perennial philosophies of holism. In contrast, the major monotheist religions are essentially anthropocentric and place humans as the centre. Consequently, this trickles down to how cultural knowledge is transmitted which, in turn, influences how NHAs are represented within the cultural sources of knowledge. However, an exhaustive discussion of this emergent reflection is beyond the scope of this thesis; the accounts gathering episodes merely allowed me to notice the unfurling of this point of interrogation. Additionally, the participants interviewed were not sufficiently heterogeneous in terms of religious and cultural beliefs for me to further expound on this topic, which may be reinvested in future research.

Chapter 8 which follows is the conclusion and recommendations of this doctoral study. The chapter will present a synthesis of the main findings and discussions across the four data sets presented in Chapters 4 to 7, as well as reorienting the discussions towards Research Question 5: 'What model of curriculum material writing and development integrates non-human animal representations to cater for ecologically responsible education in Mauritius?' The following chapter integrates the insights gathered from the findings and discussions related to Research Questions 1 to 4 and puts forward a proposal of a model of curriculum material writing and development that integrates an understanding of NHAs within a more ecologically responsible framework. Chapter 8 also provides reflections on the PhD journey and how the process of embarking on this research has been infused concomitantly into other research work, professional practice, creative projects, and the development of academic and research skills, as well as a discussion on avenues for future research.

# CHAPTER 8 – CONCLUSION AND RECOMMENDATIONS

## 8    INTRODUCTION AND OVERVIEW

This is the final chapter of the thesis which explored the representations of non-human animals (NHAs) from an ecological, cultural, literary, and educational perspective in the context of Mauritius. The aim of this doctoral research ranged from a focus on the phenomenon of representations of NHAs in children's literature in Mauritius and the English, French and Kreol Morisien primary school textbooks for Grades 1 and 2, to the discourse of children in the first year of primary school, and the discourse of primary level curriculum/textbook writers. Ecolinguistics was positioned as a set of theoretical and methodological principles at the centre of my reflections and represented a core point of articulation in my conceptual framework and the methodological approach.

Through adopting an ecolinguistics perspective, eco-critical discourse analysis (ECDA) was used alongside a thematic analysis approach of both inductive emerging themes and deductive coding using an adapted ECDA model (see Figure 6). This ecolinguistic framework was presented in Chapter 3 as the overarching method of data analysis. This chapter presents the overall findings and reflections on the data across the four data sets of (1) a random sample of nine children's books, (2) all the Grades 1 and 2 English, French, and Kreol Morisien textbooks, (3) group interviews with children in Grade 1 of primary school, and (4) accounts gathering with curriculum developers and textbook writers.

The chapter is organised into four broad parts; the first part presents the abovementioned synthesis of the overall findings and discussion. Following this, the second part presents the recommendations of the study, which is a culmination of reflections informed by the literature and data analysis in relation to research questions 1 to 4. The recommendations are therefore focussed on Research Question 5 and the objective of proposing a model of

curriculum material writing and development that integrates an understanding of NHAs within a more ecologically responsible framework in the educational context of Mauritius. A model is proposed and discussed as a tool for ecologically responsible discourse, activities, and education, which yields the potential to significantly contribute to (1) the field of ecolinguistics in terms of existing knowledge but in the previously unexplored context of Mauritius, (2) professional knowledge and pedagogical practice in Mauritius, including initial teacher training within primary level courses, including holistic education programmes, and (3) policy at a national level, as well as curriculum development and textbook writing practices in Mauritius. The recommendations of this study are not limited, however, to Research Question 5 and the proposal of model of curriculum material writing and development integrates NHA representations to cater for ecologically responsible education in Mauritius.

The third part of the chapter discusses my doctoral journey and recommendations in action during this PhD process in terms of the ethics of curriculum intervention, notably in relation to education for ecological awareness during this time of unprecedented biospheric loss and depletion (Crist, 2017). Finally, the fourth part of Chapter 8 presents my current reflections for future research using this doctoral study as a foundation towards new avenues for further projects and studies in the field of ecolinguistics and ecological education.

## 8.1 PART ONE: SYNTHESIS OF FINDINGS AND DISCUSSIONS OF THE STUDY

Continuing the rhizomatic approach adopted for Chapters 4 to 7, the key findings across the data sets are presented below in a synthesised format that interweaves the main discussions related to research questions 1 to 4. The following points are discussed in the sub-sections below in the exploration of the relationships between children's literature, primary-school level curriculum materials (specifically textbooks), Grade 1 children's meaning-making, and

textbook writers' construction of knowledge to understand representations of NHAs in the Mauritian context:

- Reorientation in the conceptualisation of destructive, ambivalent, and beneficial discourses;

- The significance of cultural knowledge;

- The importance of NHAs in children's lives;

- Empathy through first-hand NHA experiences;

- Implicit cultural didacticism and the importance of NHA characters in books;

- The pervasiveness of anthropocentric and speciesist discourse.

### 8.1.1 *Reorientation in the conceptualisation of destructive, ambivalent, and beneficial discourses*

One finding of the study was that destructive, ambivalent, and beneficial discourses (Stibbe, 2014) did not necessarily link to the concepts of ecological destruction or benefits in a linear manner. For instance, destructive discourses were, in all cases, linked to ideological perspectives filtered through socio-cultural and experiential dimensions that could be classified as destructive, like capitalism, speciesism, anthropocentrism and mass farming, and NHA exploitation. This expands the conceptualisation of the three discourse types and highlights that there is possibility for slightly reorienting the conception of each to add a layer of cultural complexity.

There was a general disarticulation between the anthroposphere and the biosphere, but even though anthropocentric language was present, partly due to default anthropocentrism (Martinelli, 2010) which has an automatic underlying discourse of destruction, it does not necessarily create destructive or negative representations. For example, the experiences people have with NHAs can potentially be more important for the formation of representations, and

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more influential than the underlying destructive discourse. For instance, the anthropocentric discourse of dogs and cats as pets, subordinated to the role of 'guard dog', was interwoven with a discourse of caring for the NHA and ensuring its needs were met. Likewise, beneficial discourses were analysed with how NHAs were represented among the participants, notably in terms of 'family' closeness, considering them as 'children' or 'family members' or related to companionship.

In terms of cultural knowledge, even discourse such as NHAs for consumption and as 'sources of food', which are fundamentally anthropocentric stances, could lead to overall more positive representations such as the pig's symbolic association with prosperity, celebration, and not wasting food. The pig is an example of the cultural dimension being significant for the participant; another example which foregrounds the social dimension is representations of the horse. The latter is spoken of in terms of anthropocentric social values in racing and as an NHA for human exploitation in relation to betting, but the capitalist activity of racing led to participants developing an appreciation of the horse's speed and traits as beautiful. In terms of expanding the conceptions of the three discourse types, it shows that we cannot be automatically dismissive of anthropocentric discourse. We require a critical perspective because of these multiple superimposed layers of cultural knowledge, contextual knowledge, social values and significance, which indicate there is not a linear relationship between destructive discourse and destructive behaviour.

### 8.1.2   *The significance of cultural knowledge*

Cultural knowledge is another significant theme that emerged, especially across the accounts gathering process and the participants' responses in the different episodes. Discourses around cultural knowledge were found to be heterogeneous as they encompassed both ambivalent and beneficial discourses. Beneficial discourses were most often linked to how the participant's culture represented NHAs, notably in the form of deities through religious teachings and

philosophies. The participants had internalised the principles of beneficial discourse of specific NHAs related to their culture, such as elephants for example. Ambivalent discourses were also noted among those who shared a different cultural background.

The influence of cultural discourse was reflected in textbook development through the last question regarding the implications of NHAs on curriculum development and textbook writing. Participants shared their experiences regarding the resistance to certain NHA characters in the FYP and this was noted as paradoxical, due to the high presence of NHAs in children's lives; from this, participants noted that multiculturalism in Mauritius is complex and can be both enriching but also a hinderance to pedagogical choices, in relation to ecological education and NHA representations.

### 8.1.3  The importance of NHAs in children's lives

The significance of NHAs in children's lives was another important point in the context of this study. Participants, in the interviews with children and the accounts gathering with adults, described how they were exposed to NHAs through different media, like TV shows, comics, and cartoons. Many of these depictions were anthropomorphised, which helped them construct a more 'harmonic' representation of humans and NHAs as they were able to relate to these characters. This highlights the importance of media and transmediation in the construction of representations of NHAs.  Participants in the accounts gathering also explained how, in their observations and experiences, notably as educators or individuals in the training of educators, NHAs were often present among children as part of their lives and how the latter 'liked' NHAs. This was a factor explaining the choices of NHA characters in textbooks; the choice of NHA characters was not only about fulfilling curricular needs but also encouraging the children to develop values of caring for NHAs.

Beyond 'vocabulary' as cited by one participant, it would be a natural advantage for the children to learn about, and more importantly, to learn how to care for NHAs as a form of empathy towards them. The textbook was viewed as a pedagogical tool that could possibly seek to nurture these values and attitudes. Through ECDA and thematic analysis of the CL, it was also evident that children's books were also conveyors of ideologies that could encourage either beneficial or destructive discourse on NHAs. Though textbooks for part of the didactic resources provided to primary schools for teachers to use, the personal choices of CL that teachers make, to use in the classroom, could contribute to develop values of caring.

### 8.1.4  *Empathy through first-hand NHA experiences*

Empathy was another theme that emerged through the discussion with participants in the accounts gathering, who unanimously highlighted empirical interactions with NHAs as one of the building blocks in the construction of representation of NHAs and relationships with nature. First-hand experience was noted as being instrumental in how participants articulated their relationships with NHAs; this empirical dimension also has the capacity to transcend transmitted cultural knowledge. One participant explained how the experience of having dogs changed his outlook, from a dominant anthropocentric discourse when he was young to a beneficial discourse of considering them as family members.

Another participant repeatedly mentioned that some things can only be understood through living certain experiences, which corroborates with the data gathered during interviews with children where the notion of 'pets' was central in their discourse. During the interviews it was noted that the children constructed a large part of their representations and liking of NHAs through their own experiences with their pets that often formed part of their family circle. Such first-hand experiences shaped their preferences and their attitudes towards those NHAs, considering them as having more positive traits and thus constructing more ecologically beneficial representations. Therefore, the inclusion of first-hand experiences of NHAs and

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nature becomes a noteworthy factor when considering ecologically responsible education and discourse.

### 8.1.5 *Implicit cultural didacticism and the importance of NHA characters in books*

In relation to first-hand experiences, another key theme emerged in terms of implicit cultural didacticism. This form of cultural didacticism was noted in participants' accounts of their lived experiences with NHAs, such as one participant who mentioned the death of his cats taught him certain life lessons, but it was also encompassed in books that were significant to the participants. The presence and importance of NHA characters in books were observed during the accounts gathering process as a noteworthy response from the participants in the different episodes. One participant, for example, cited *Animal Farm* (Orwell, 1945) as being fundamental in how he constructed knowledge about NHAs, and about life later on, through satirical portrayals. This also links to the statements of the participants who insisted that NHAs are very present in children's lives, notably when it comes to portrayals in different media.

This corroborates with the CL analysis in Chapter 4, where NHAs were found to be significant in the sample of books, in all three languages. All of the books had anthropomorphic NHA characters except one; the exception was *Zistwar Mustik* (Mosquito Story) which featured the mosquito as a pest, without any form of anthropomorphising. Even though the latter story did not feature anthropomorphic NHAs, the story had a very explicit didactic dimension of encouraging healthy and hygienic behaviours to avoid mosquito bites and the potential spread of disease, which is a risk that forms part of life in the tropical context of Mauritius. The other CL also showed that anthropomorphic NHAs were used as either metaphorical or symbolic humans for teaching values and good behaviour, such as *Trois Petits Lapins Gourmands* or *Horrible Bear*, or tales that reflect ideologies on how the world came to be as in the *Greedy Zebra*, or stories of how humans interact with, frame, and evaluate NHAs such as *Sinn Sinn* and *The Tale of Peter Rabbit*. However, two books from the CL sample,

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showed high levels of anthropocentrism and speciesism, which relates to the final key theme discussed below.

### 8.1.6   *The pervasiveness of anthropocentric and speciesist discourse*

Anthropocentrism and speciesism were also evident throughout the analysis of the four data sets and the pervasiveness of these discourses was a significant theme that emerged. In the accounts gathering for example, most expressions cited were speciesist in nature and were found to be quite common in the verbal interactions of the participants. Milder forms of anthropocentrism were observed in relation to topics and experiences such as NHAs as food, NHAs used in racing, pets, and gardening. This also aligns with the implicit capitalistic discourse; this was observed in CL analysis in *The Tale of Peter Rabbit* and *Sinn Sinn*, where capitalist discourse is woven into the writing through the portrayal of the human character, land ownership, and economic exploitation of land.

The horse as the object of anthropocentric discourse during childhood has been observed in accounts gathering episode 1 and interviews with children, where the horse was mentioned in terms of horseracing. However, the way the participants in both these data sets constructed their own meaning of the horse led to further reflections on the term I coined as 'ego-anthropocentrism' which shows how NHA representations can converge around a form of children-specific anthropocentrism related to the egocentric phase of psychological development which characterises children's linguistic and social behaviour (Piaget, 1962). The child who mentioned liking horses because "they make you win" reflects an anthropocentric ideology based on lived experiences of visiting the racing-tracks with a parent; it also links to the adult participant in accounts gathering episode 1 who constructed an imaginary, desirable and beneficial discourse around the horse as an object of awe. This also reinforces my assumption that children do not necessarily and automatically display anthropocentric or speciesist discourse, and that many of their representations are based on how they subjectively

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experience NHAs. In terms of ecologically responsible education, it indicates that first-hand experience is fundamental to the construction of representations and relational dynamics with NHAs during the egocentric developmental phases of childhood and children's learning.

Some NHAs are vilified in CL and the negative connotations can appear in adult discourse, such as the case of the wolf who was framed as a villain and monster in *Le Bogue* and *Le Loup Vengeur*. These two texts conveyed a high level of speciesist discourse, especially in relation to the wolf and present examples of how important it is for teachers to make ecologically responsible choices when they have the freedom and volition to choose the materials that primary school children are exposed to, which impacts on their learning and could shape their constructions of knowledge about NHAs and the biosphere. Such representations shape the way NHAs are framed in the individual's mind; the response of one participant in accounts gathering episode 3, section 7.25, shows that such representations are present in adulthood. They could influence the choices a textbook writer makes as an interposition between the child and the actual curriculum materials, for example, choosing to exclude wolves or other predatory NHAs, or to only include them in texts with either speciesist overtones or explicit speciesist framing, therefore directly impacting on part of the children's learning in classroom contexts in Mauritius.

The sections above have briefly summarised the key themes and reflections that emerged from the data analysis of the four data sets for this study. These main points are synthesised in relation to research questions 1 to 4; they present the ways in which NHAs are represented in children's literature and curriculum textbooks for Grades 1 and 2 in Mauritius, the relationships between NHA representations in Mauritius and an understanding of the ecosystem, and the relationships between NHA representations in curriculum materials and culture in the Mauritian context across the data sets. The second part of Chapter 8 below

presents the recommendations of the study which builds from the findings of the four previous research questions and is aligned with research question 5.

## 8.2 PART TWO: RECOMMENDATIONS FOR HOLISM, ANTHROPOHARMONISM AND THE INTEGRATED APPROACH

While disarticulations between the anthroposphere and biosphere were mainly foregrounded in the documentary data sets, the data sets with live participants demonstrated that the children and adults alike developed diverse types of meaningful relationships and representations of NHAs. It is therefore fundamental to reflect on the shifts required to move towards a more harmonious holistic approach, which would allow for the interconnectedness of all spheres at the paradigmatic level while simultaneously foregrounding the positive connections between humans and NHAs. To situate my paradigmatic reflections on curriculum for Research Question 5, the subsequent sub-sections discuss the different dominant models and paradigms of the learner, which serve as a backdrop for the elaboration of the holism paradigm and Holistic Education (HE) as the anchor of an anthropoharmonic (Horowitz & Bekoff, 2007) vision.

An educational model which is built around conformism, where the child is considered as a passive receiver of information, is not compatible with my posture of ecologically responsible education. Instead, active meaning-making children construct meaning critically through their positioning within the socio-cultural tapestry of their environment, mediated by adult discourse, symbolic forms, and media. This is aligned with the reformist paradigm which is constructivist in nature; therefore, the epistemological and philosophical underpinnings of my study are aligned with reformist and transformative paradigms (MacNaughton, 2003). In order to move towards a transformative curriculum, which would be the long-term goal, there is a need to reform before transformation can happen; thus, a reformist curriculum provides

more viable options and pathways for exploring the integration of ecological thinking and responsibility.

The findings of this study demonstrated, notably through Data Sets 3 and 4, how the cultural dimension is fundamental in the child's symbolic and representational constructions. In the same way, socio-symbolic constructions of NHAs via culture are internalised by children who develop their own representations based on how they socially and culturally construct knowledge about them through interactions. Thus, the child does not learn about the symbolism of NHA artefacts in a vacuum (Vygotsky, 1978). Instead, this semiotic aspect is invested in and magnified by inter-personal and social interactions via culture. The data have revealed that children do not have any intrinsic predisposition towards anthropocentrism, or speciesism, except in cases where the construct of ego-anthropocentrism was foregrounded; it is via cultural information and adult discourse that they develop these attitudes. Such information is transmitted multimodally, through verbal interactions, media, textbooks, and literature material.

### 8.2.1 *Psychodynamics and the reformist paradigm*

Psychodynamics is relevant to the reformist paradigm (MacNaughton, 2003) as it draws from works in psychoanalysis and studies the role of thinking and emotions in learning. Emotions and interconnections between the 'thinking' life and the 'feeling' life are considered as being fundamental in this approach. From a curriculum perspective, psychodynamics lays emphasis on empowering the child to develop investigative capacities to seek and construct meaning. Anthropomorphism, for example, can be considered from the psychodynamic lens in reflections around how the attribution of human characteristics to NHAs can have a direct impact on how children receive the characters affectively and engage in meaningful learning through emotional engagement. This is demonstrated by how children attribute meaning to

NHAs through anthropomorphised media representations, as well as their own direct, first-hand experiences.

This can also be linked to motivation and further affective links with certain NHAs, especially in cases where learners have NHA companions in their households. In this respect, psychodynamics is rooted in constructivism, with an added layer of emotional connection. This can be linked to the concept of transduction, where the learner infuses his/her own socio-cognitive and emotional DNA into what is to be known in order to construct meaning (Jewitt et al., 2001). *Expérienciation* (Engel, 2007; Robillard, 2017) is also a related concept. Contrary to classical empiricism, where experiences are considered as data to be analysed through the lenses of rational systems of knowledge, *expérienciation* emphasises the 'being' and opens space to emotions, feelings, and intuition. I posit that a broader conception of constructivism, which would go along the lines of 'eco-constructivism' (beyond socio-constructivism), would not only encompass 'learning by doing' but 'learning by being' and 'learning through being with'. This is instrumental for this present study as the empirical data, through interviews and accounts gathering, directly link to the affective and emotional connections between NHA companions and the participants; the feelings of caring and empathy emerged in many cases from the direct interactions with NHAs. The notions of 'learning by being' and 'learning through being with' also align with the holistic philosophy of learning to be 'human', in the broader encompassing sense of the 'human' as interconnected with the biosphere and the cosmos; it recognises the human as a spiritual being in search of meaning beyond thought and emotion (Nava, 2001).

The reformist paradigm, through the eco-constructivist posture, lays a solid basis for how curriculum can be understood in light of the epistemological and philosophical posture of this study. My assumption of the child as being a critical reader and an active meaning-maker corresponded to the findings which suggest that the sociocultural dimension, as information

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transmitted through different media, including CL and textbooks, have a consequence on the construction of representations. Active meaning-making is directly linked to language, which is the primary observation material, as well as the medium through which ideologies and representations are realised through different types and modes of discourse.

An eco-constructivist curriculum model integrating such complexity and interrelatedness, while considering the child as an active meaning-maker, would paradigmatically detach from conformist, linear thinking and integrate elements that allow profound rethinking towards a transformative perspective. In this line of reasoning, complexity and holism provide interesting insights into how the curriculum can be rethought. The reflections of Morin (2001; 2007; 2008), whose philosophical perspective was discussed in section 2.2. of Chapter 2, are particularly useful in the articulation of my epistemic alignment and general philosophical posture around the issue of curriculum within an ecolinguistic framework that takes NHAs into consideration.

## 8.3    Developing cosmocentric values: Lessons from complexity

Complexity provides interesting avenues in the implementation of a reformist paradigm that moves towards a transformative curriculum. Drawing from Morin's (2001) work, which proposes a broader, humanitarian and ecologically responsible philosophy that fits my epistemic posture based on ecolinguistics, I reflect on complexity and holism as a potential pathway for integrating elements emerging from my study.  These reflections began while working on the literature review in Chapter 2 and such an integrated perspective of complexity and holism is aligned with the notion of 'being there' at planetary level (Morin, 2001), which can be likened to the concept of 'cosmocentrism' in the holistic education (HE) paradigm; it implies learning to live, to share, to communicate and to be one with cultures and nature, in all its diversity.

Cosmocentrism embraces contemporary physics and astronomy in considering the universe as primary and the human as being a derivative in this perspective. The cosmocentric perspective was developed by Berry and Swimme (as cited by Scharper, 2007, p. 362) and "suggests that unless we understand our role as humans within the greater unfolding of the universe itself, not only our imaginations but also our ethics will be truncated, and any ecological stratagems of healing earth-human and human-animal relations will be incomplete". For Berry and Swimme (as cited by Scharper, 2007, p. 362), cosmocentrism allows the possibilities of bringing together the world's religious traditions and contemporary scientific explorations in "a unified quest for meaning and ecological integrity— a healing of human-earth relations". Intermeshed with this concept, Morin (2001) proposes the cultivation of four central values in terms of planetary awareness:

(1) Anthropological awareness (conscience), which recognises our unity in diversity;

(2) Ecological awareness and conscience that we are inhabiting the planet with all other mortal beings, in the same living sphere (biosphere), and acknowledging our consubstantial link with the biosphere leads us to nourish the aspiration of harmonious coexistence on Earth;

(3) Earth civic awareness, responsibility and solidarity for children of the Earth; and

(4) Dialogical awareness which comes from the complex exercise of thought and allows us to simultaneously criticise and mutually understand ourselves.

These four levels of awareness, which relate to the principle of cosmocentrism in HE, are instrumental in modelling an eco-responsible, anthropoharmonic curriculum; they can also be considered as four central values as the intention is for awareness to evolve into these principles. By developing a meta-level awareness of these four central values (Morin, 2001), curriculum developers and teachers, as well as parents and other stakeholders involved in curriculum, can have a broader, planetary level perspective that de facto, implies the mutually

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inclusive relationship between the anthroposphere and the biosphere. At the same time, these levels of awareness are also in line with the conception of the child as an active meaning-maker. I argue for a curriculum model, aligned within a reformist paradigm that incorporates the four central values above as a step towards sustainability and socio-ecological justice.

These four central values link to a decentralised perspective where anthropocentrism is no longer the dominant ideology. Dialogical awareness, for instance, explicitly recognises the capacity of children to be critical thinkers within the school environment and their larger environment as social and ecologically- aware beings. Building on these two principles, curricular design and pedagogical choices in textbook conception, therefore, can be based on an ecologically- responsible framework which takes into consideration the fundamentals of ecolinguistics, as discussed throughout this study. Curriculum materials based on dialogical and ecological awareness, for example, would avoid an exclusively anthropocentric perspective on the representations of NHAs in texts, and orient textbook developers towards more informed stories. Respecting dialogical and ecological awareness would automatically create conditions for the values of anthropological awareness and Earth civic awareness. These can also be read alongside the principles of holism and HE, which are potential avenues for the application of this general philosophy into the Mauritian curriculum. Some of the elements which formed part of my reflections have already been implemented in curriculum development and are discussed below in section 8.4.1, related to my PhD journey and the recommendations in action.

## 8.4   From complexity to holism

The findings of this study demonstrated that the issues of representation are fundamentally the result of the complex interplay of multiple factors; hence, there is already a basis for reflections and enactment of a transformative philosophy. In light of the current on-going educational

reform in Mauritius, where a Holistic Education (HE) diploma for teacher training at primary school level has been introduced in the curriculum, I argue that HE, with its underpinning philosophy of holism, is a pathway to explore curricular integration of the principles discussed in this recommendation section of Chapter 8.

Despite evident links between HE and complexity (Jörg, 2011), I argue that the notion of holism has to be critically nuanced. In my conception of holism, I take into consideration the ideas of Morin (2008) who criticises the notion of holism in the same way he criticises that of reductionism. He states that focusing either on the overly global (holism) or on the overly local (reductionism) causes the loss of valuable information and experiences about what happens at the intermediate levels between the two (Morin, 2008). In this sense, he views reality neither from a holistic standpoint, nor from a reductionist one, preferring the notion of 'hologram' instead, where the parts are within the whole which is within the parts.

Alongside the eco-constructivist notion of 'learning by being', the concept of 'becoming' is also anchored in transformation and *expérienciation* (Engel, 2007; Robillard, 2008). Incorporating complexity to the process of rethinking 'learning' may lead to a transdisciplinary perspective. The transdisciplinary curriculum, which operates within the context of paradigm shifts, encourages critical thinking and learning, and posits that all knowledge is interconnected with multiple possible answers. This interconnectedness is fundamental to the concept of complexity itself as interconnectedness is the foundation of the philosophy of holism and therefore crucial in reflections around curriculum.

Similar to the constructs of 'sustainability' and 'sustainable education', HE is also present in the mainstream National Curriculum Framework (MoE, 2015) document in Mauritius. However, it is insufficiently problematised, which renders links with other aspects of the NCF (MoE, 2015) philosophy fragile. For instance, English language learning is

presented as an instrumental necessity in a globalised world marked by capitalism and a holistic philosophy is not compatible with such a perspective; likewise, languages being learned as discrete systems, from the early years of education, in a multilingual environment such as Mauritius is subject to criticisms from a holistic perspective. Therefore, this study suggests a 'critical holism' or 'critical holistic education' that is anchored in the principles of complexity alongside the four central values of planetary awareness, as being a potentially helpful contribution for curriculum design in terms of ecologically responsible language teaching and learning.

### 8.4.1    *Holistic education, anthropoharmonism and Earth identity in the curriculum*

Considering the fundamental characteristics of HE as discussed in section 2.13 of Chapter 2, humane education and anthropoharmonism emerge as salient concepts in and for education. Anthropoharmonism is a concept that recognises the unique perspective of humans and of 'being human' in terms of default anthropocentrism, but simultaneously recognises that humans are completely dependent on the broader Earth community and thus need to act in harmony with it. Anthropoharmonism focuses on ecological wisdom that enables humans to identify, understand, and engage in actions that are mutually enhancing for human beings and the Earth's ecosystem (Horowitz & Bekoff, 2007).

Humane education and anthropoharmonism not only consider representations of NHAs explicitly, but are also, to some extent, already present in the underlying philosophy of holism. However, the two former concepts render representations of NHAs, and human relationships with them, more prominent in their respective ideologies and approaches to life experience and learning. Nonetheless, HE in general and contextually within Mauritius provides the opportunity to infuse both concepts in such a way as to cultivate environmental awareness, recognition of diversity and unity beyond the human 'self'. This is done with consideration of the ecosystem, conscious reflection and learning about nature as well as our place within and

as part of it. As Miller (2006, p. 101) explains, "holistic education cultivates a curriculum of connections", and an underlying principle of holistic learning is that education is effectively acquired when individual parts of knowledge are synergistically connected to each other.

I have opted to focus on Morin's (2001) conception of 'teaching Earth identity' where he resituates the human condition within the biosphere and the cosmos. Building upon this, I have identified key ideas from HE which map onto Morin's (2001) arguments where the multiple levels of planetary awareness are at the core of education. All the levels of holistic wholeness (Nacagawa 2002; Nava, 2001) are relevant as they indicate the multiple levels of integration of the human to the biosphere and beyond, in terms of the cosmos. The multiple levels of wholeness start from the individual and extend to the micro, meso and macro-social levels; until the third level, the focus is on the anthroposphere, the fourth level focuses on the biosphere, in terms of the wholeness of the planet, and the fifth level evokes the cosmos.

Following my general non-dualistic philosophy, I align my argument with Morin (2001) who states the importance of moving beyond the socio-ethno-anthropocentrism which characterises traditional human thought. In other words, it is important to move beyond the anthroposphere in order to think along the lines of biospheric integration. This aligns with the UNESCO (1996) pillars of HE in terms of 'learning to live together'. This pillar holds interconnectedness as fundamental to HE. It implies a knowledge and understanding of the self and of others, and of empathy and alterity, which were key findings in relation to first-hand experiences of NHAs as well as implicit didacticism in the representations of NHAs in textbooks. This pillar is about caring for and sharing with others, valorising diversity in all forms, living responsibly, fostering cooperation, and mutual respect with all living organisms.

The main lines of holism, therefore, map onto complexity thinking and teaching 'Earth identity'. From the epistemological perspective, the holistic education-complexity nexus

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condenses the ideas from the transformative and the reformist paradigms. However, the reformist paradigm tends to propose universalist principles while the transformative paradigm is more contextually bound. The convergence of the holistic education-complexity nexus, taken into consideration with the transformative and reformist paradigms, led me to reflect on the principles of humane education as they connect directly with an anthropoharmonic philosophy of education and curriculum development practices.

### 8.4.2    *The holistic education curriculum and integration of humane education*

The concept of humane education is of particular significance to this study as it acts as an articulation point with respect to considerations about NHAs, children's literature, the cultural dimension, and reflections around integration in the curriculum. This also links forward to HE in Mauritius, as a contextually relevant pathway to explore the integration of humane education in policy documents, and as having an effect on policy, curriculum, and textbook writing, as well as teacher training practices. Being fundamentally global in nature, humane education delves into a range of issues and is situated in the challenging global circumstances affecting the planet like human oppression, NHA exploitation, materialism and ecological destruction.

As a response to this situation, humane education seeks to explore pathways whereby humans might live with compassion and respect towards other individuals, related or not, towards all NHAs and towards the Earth. This links to four of Miller's (2000) five levels of wholeness when he speaks of holistic education. The essence of humane education is particularly interesting in the context of my work as it corresponds with my epistemological and theoretical stance. The ecolinguistic paradigm, which was discussed in detail in Chapter 3, considers human actions toward and interactions with nature as being within the ecosystem, in the sense that humans are only part of the larger biosphere, and by extension, the cosmos, which is shared with other species.

Kindness and integrity are central in the conception of humane education, which makes it a particularly valuable consideration for ecologically-responsible education and discourse. This relates to the findings of this research where caring for, empathy and bonding with NHAs emerged as a significant theme. Humane education opens opportunities for learners to develop necessary insights that could then help them make informed, responsible and compassionate choices. This would, in turn, help them to live as responsible citizens who adhere to ethical principles and values that not only give meaning to their own lives but also simultaneously improve the world. Humane education is about empowering and autonomising the students to make their own choices with respect to the pathways towards knowledge construction and, by extension, construction of the self. A transdisciplinary curriculum, with the notion of a reformist paradigm, integrates the principles of holistic education-complexity, notably by blurring the frontiers between languages and subject areas. Such a curriculum simultaneously allows space for the axiological aspects like alterity and the different levels of planetary awareness (Morin, 2001), and would pave the way for a reformed and transformed educational system.

Providing the required conditions to help learners construct meaning and representation is fundamental in this perspective. Here, parallels can be drawn with Foucault's statement about discourses as "practices that systematically form the objects of which they speak" (2013, cited in Stibbe, 2015, p. 23). In the context of humane education, the formation, use and diffusion of discourses has repercussions on how the learners, as humans having a degree of agency, construct their own discourses about ecosystems (human and non-human) and consequently how they behave and act towards them.

### 8.4.3   *Integrating the principles of Humane Education into policy and practice*

I consider humane education as the precondition to a holistically-geared curriculum which is oriented towards an extended view of sustainability. This is potentially crucial to curriculum

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development as it can have ramifications on how NHAs and the biosphere are represented, not only in language textbooks but in other subject areas, such as science, history, and geography. The findings of this doctoral study suggested that textbooks and the stories therein are important artefacts (Vygotsky, 1978) in mediating the interaction of children with others, including NHAs. They are also crucial in how children construct their representations of and regulate their behaviour towards NHAs and the environment in a broader sense. My findings foregrounded that textbooks also condense different levels of others' representations (curriculum developers, authors of texts that have been adapted, and writers of original text among others) which are interposed between the text and the child as an active meaning-maker.

Considering these elements, I argue that four main principles of humane education (Jalongo, 2013) represent a necessary condition for ecologically responsible discourse and education, which can be interwoven into policy writing, curriculum development, and professional practice at the level of teacher training for primary school educators in the Mauritian context. These four principles are as follows:

1. Provision of accurate information so that students are able to understand the consequences of their processes of decision-making as individuals, consumers and citizens.

2. Fostering the three Cs of curiosity, creativity and critical thinking, so that students are able to evaluate information and autonomously solve problems.

3. Instilling the three Rs of reverence, respect and responsibility, so that students will learn to act with kindness and integrity.

4. Offering positive choices that benefit oneself, other people, the earth and NHAs so that students are able to contribute to a better world.

As pointed out by Horowitz & Bekoff, (2007), it is important to integrate humane education in curricula so that we can live in harmony and with respect towards humans, non-humans and the whole biosphere. This is particularly important in the context of this doctoral research and the epistemological and theoretical framework that has been adopted. The intermeshing of texts via children's literature, as independent material, and extracts integrated into language textbooks are crucial in the formation of representations around NHAs. The cultural dimension, as foregrounded in the accounts gathering data set, is also fundamental in my argument towards rethinking the curriculum to integrate a more eco-responsible and sustainable philosophy. The statements of Horowitz & Bekoff, (2007) also point to the notion of anthropoharmonism as a philosophy that goes beyond considerations about anthropocentrism and acts as a fulcrum between the principles of humane education and HE.

This thesis provides reflections which could potentially contribute to framing policy at national level with regard to ecologically-responsible education and discourse within education that goes beyond the current conceptions limited to education for sustainable development which does not sufficiently recognise the holistic, mutually life-sustaining connections between humans and non-humans. The statements of Horowitz & Bekoff (2007) also support my recommendation that anthropoharmonism, Earth identity (Morin, 2001) and humane education can be explored further as ecologically and pedagogically valuable pathways to be integrated into the current provision of holistic education in Mauritius. As an insider researcher, my intention is to feed these doctoral research endeavours into the previously mentioned HE diploma programme in Mauritius. HE teacher-training provides a fertile terrain for further exploration and contribution in relation to the ecolinguistics paradigm, as the epistemic and theoretical framework adopted for this study. In this sense, anthropoharmonism is a useful ecosophy (Guattari, 1992), or 'ecosophical' posture, which allows conceptual transiting

between humane education and holistic education; I discuss these elements further in the 'recommendations in action' section below.

In synthesising the above reflections, and the findings of my thesis, I am proposing the following condensed model of anthropoharmonic-holistic education and curriculum development as the overall concluding model in this doctoral thesis. This final model below, Figure 15, addresses all the research questions, with a particular focus on Research Question 5, and it can be used for rethinking ecologically responsible education, textbook writing and curriculum development practices at a macro-level, in terms of national policy development. It is also a model that interweaves three 'constellations' which can also be used at meso and micro levels in relation to developing ecologically responsible reflectivity and discourse; this aspect will be further discussed in section 8.3.

Reading the synthesised findings of this study in relation to the recommendations for teacher education and curriculum aspects mentioned above was instrumental in advancing my reflections in relation to my practice as a teacher educator and curriculum developer, and discussions over the years have contributed partly to the reflections of other colleagues and critical friends who share similar philosophical postures. One of the guiding premises is that the child, at the receiving end of the curriculum process, is an active meaning-maker and critical reader of texts who is able to autonomously construct NHA representations from multimodal and transmediated information. Ego-anthropocentrism is an aspect which illustrates this. This information is received via mediated action in the anthroposphere, which has been traditionally separated from the biosphere. The second important premise for guiding my thinking and action with respect to my different identities was to consider the anthroposphere and the biosphere as integrated in mutually inclusive, hologramic perspective (Morin, 2008) where anthropoharmonism (Hathaway, 2015; Horowitz & Bekoff, 2007) and holism are important.

Text and discourse, notably in CL and curriculum material, are crucial in the meaning-making process and construction of NHA representations as they were found to be fundamental artefacts which mediated the learning of the children and their interactions and behaviour with others, including NHAs. CL and curriculum materials also represented the condensation of the representations and ideologies of others in terms of authors of adapted text, original text writers, and curriculum developers. In this sense, the cultural dimension and knowledge, in terms of the cultural cognitive machine (Morin, 2007), are fundamental in how texts and discourse are chosen, integrated to, or removed from textbooks. Given its prominence, the cultural aspect is also an important element to consider, not only to help learners construct cultural and metacultural awareness, but also to situate cultural knowledge within the larger biosphere, especially in terms of awareness of how NHAs are represented and treated with respect to different cultural foci. Even though this research points to the necessity of an integrated, reformed, and transformative curriculum, I have already been able to implement the thinking that has emanated from this research, at least partially, into my practice.

I also posit that the model, which is discussed below, can be useful for practising primary school teachers, not just in terms of how they can construct their own awareness and that of their learners on the issues surrounding NHAs, but also to implement different types of anthropoharmonic, holistic and ecologically-responsible activities. Building from the avoidance of destructive, anthropocentric and speciesist discourses, they can also use the thinking that emerges from the models to design language, and other subjects, activities based on empathy and ecological responsibility.

## 8.5   THE ECO-ACHHE MODEL

The model below (Figure 15) represents the culminating point of my doctoral research. The findings and discussions from the first four research questions funnelled to the fifth, which is
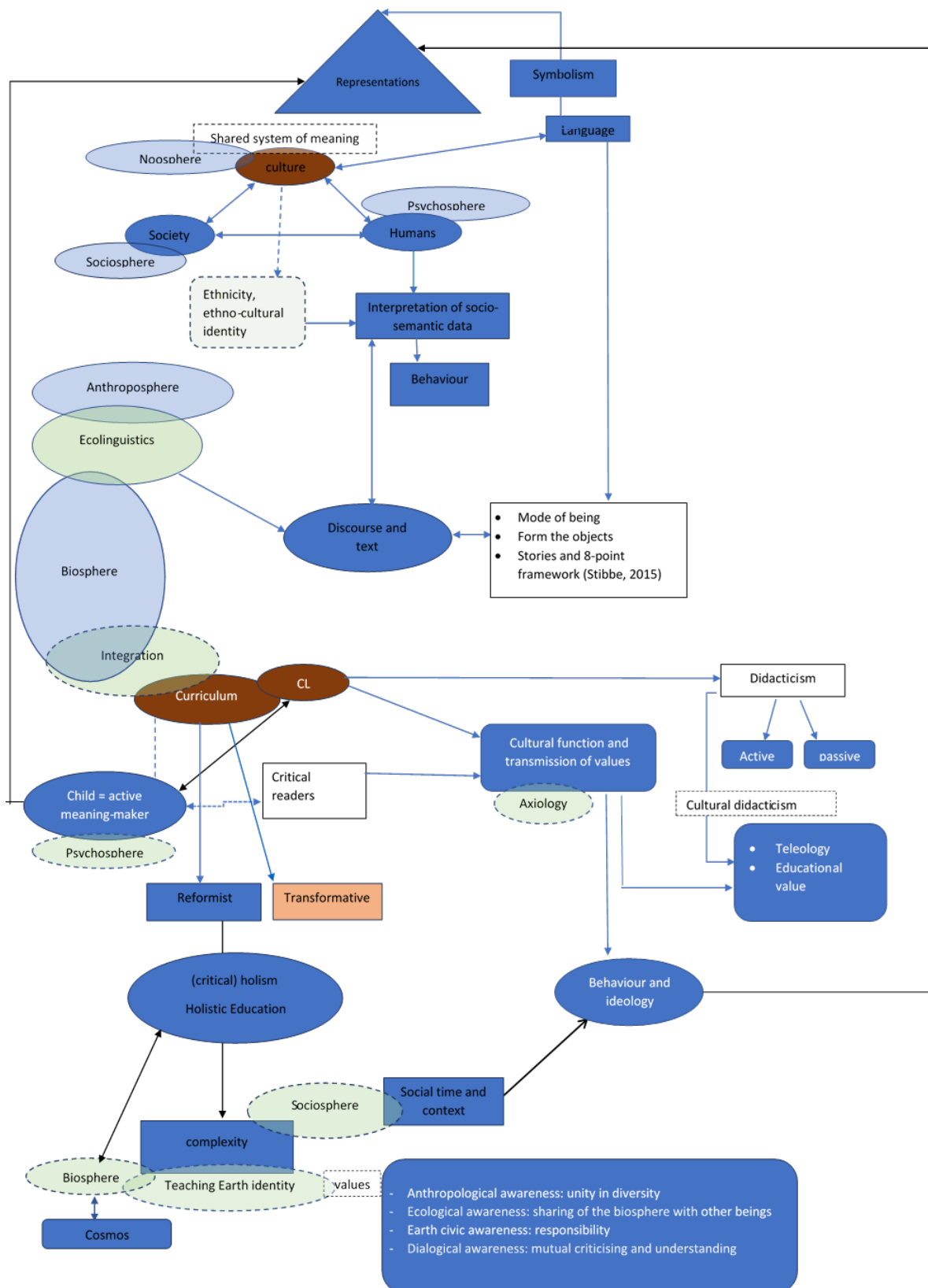
condensed as a curriculum model that takes into consideration ecological-responsibility, anthropoharmonism, critical holism, and humane education, which I have henceforth simplified as the acronym Eco-ACHHE. It is also a combination of two models discussed previously, namely the model of culture within the noosphere (see Figure 3 in section 2.7 of Chapter 2) and the model of children's literature within the biosphere (see Figure 4 in section 2.10 of Chapter 2), with an additional third constellation of NHA representations within a reformist and transformative curriculum.

The model is rhizomatic in nature; it does not have a central point and the inter-relations between the three constellations are such that any component can be taken as a point of reference. For the sake of clarity, however, I present the main reflections pertaining to the model from the theoretical assumptions moving to the implementation perspectives in practice and curricular thinking.

The upper constellation of the model represents the key theoretical assumptions that informed the research; these assumptions were later substantiated in the course of the research process, through the data that were gathered and analysed. This upper constellation of the model foregrounds the theoretical and epistemological conditions necessary for the implementation of an Eco-ACHHE curriculum. Culture is an important element, as the cultural cognitive machine (Morin, 2008), which emerges from the multi-level interactions between the noosphere, the sociosphere and the psychosphere. Language plays a central part in the formation of culture (Blanchet, 2012; Foucault, 2013; Short, 2011; Stephens,1992), as a vector and transmitter of socio-symbolic information about life, including NHAs. Such information has a direct impact on the behaviour and representations of individuals towards others and the formation and perpetuation of stories we live by (Stibbe, 2015).

**Figure 15**

*The Eco-ACHHE Model*



Representations

Symbolism

Language

Shared system of meaning

Noosphere

culture

Psychosphere

Society

Humans

Sociosphere

Ethnicity,
ethno-cultural
identity

Interpretation of socio-semantic data

Behaviour

Anthroposphere

Ecolinguistics

Biosphere

Discourse and text

- Mode of being
- Form the objects
- Stories and 8-point framework (Stibbe, 2015)

Integration

CL

Curriculum

Didacticism

Cultural function and transmission of values

Active

passive

Axiology

Cultural didacticism

Critical readers

Child = active meaning-maker

Psychosphere

Reformist

Transformative

- Teleology
- Educational value

(critical) holism

Holistic Education

Behaviour and ideology

Social time and context

Sociosphere

complexity

Biosphere

Teaching Earth identity

values

Cosmos

- Anthropological awareness: unity in diversity
- Ecological awareness: sharing of the biosphere with other beings
- Earth civic awareness: responsibility
- Dialogical awareness: mutual criticising and understanding

The three spheres (noosphere, sociosphere, psychosphere), which constitute the wider anthroposphere, must however be conceptualised within the holistic biosphere. My research showed that there are several disarticulations between these two broader spheres, which is one of the critical aspects that lead to destructive discourse, anthropocentrism and speciesism; the study has highlighted that there is a scope for rearticulation of the conception of these spheres towards a broader Eco-ACHHE thinking. There are cultural and experiential elements that are positive and elements that there are non-destructive despite anthropocentric undertones. Thus, it reinforces the need for a reformist curriculum that would be constructed around an Eco-ACHHE philosophy; at a meso-level some steps have already been taken to move in this direction and this is discussed below in the third part of the chapter.

The reflections on the upper constellation feed into the central part of the model, which foregrounds the importance of discourse, inclusive of texts, in the formation of representations of NHAs. Textbooks, for instance, are important artefacts (Vygotsky, 1978) that mediate the child's learning and interaction with others. These artefacts encompass multiple layers of representations of others, through stories, discourses of curriculum developers, and indirect discourses of other stakeholders, with the latter two functioning as interpositions between the child and the curriculum materials themselves.

As a measure to move away from unfounded destructive discourses, research was found to be crucial to pave the way for informed decisions and reflections; this also emerged during the accounts gathering episode, where one participant stated the importance of such ecolinguistics research in shaping curriculum development practices and policies. The philosophical, epistemological and theoretical foundations of ecolinguistics provide a valuable lens through which the NHA representations through discourse can be critically reflected upon, problematised and critically evaluated, to pave the way towards an Eco-ACHHE curriculum. When considering a shift towards a reformist curriculum, and eventually transformative

paradigm, it is necessary to reflect critically on the importance of the didacticism in CL and textbooks, whether it is in the active or passive form; an ecolinguistic perspective would thus be instrumental in such reflections. Children, as critical readers and active meaning-makers, have the capacity to construct representations from the discourse in textbooks as well as CL. Hence, for teachers and curriculum developers, cultural and ecological awareness are fundamental in the choice of material and stories used in the education system.

The lower third constellation of the model represents the possible avenues for implementing an Eco-ACHHE curriculum. While the goal is to reach a transformative model of curriculum in Mauritius, this may not be achievable in the immediate future, but possible as a long-term goal. This study recommends the implementation of a reformist curriculum is an entry point towards an eventual transformative model, notably through holistic education as a philosophy that is already present in the local educational landscape, and thus a viable pathway that would not imply a dramatic disruption or change in current policies and practices; it would not be a drastic overhaul building from scratch, but a reconfiguration of the existing system in the Mauritian context.

The adoption of an Eco-ACHHE philosophy is achievable as from a micro-level, starting with the sensitisation of teachers in their pedagogical choices and discourses regarding choice of NHA and biosphere representations they teach their learners. An adapted version of the Eco-ACHHE model for teacher-training can be referred to in Appendix UU. This grassroots level of awareness is essential as my study showed that children are not only critical readers and active meaning-makers, but are also influenced by adult discourse, media and various types of CL. For instance, it is important for teachers to provide accurate information on NHAs to children so that the latter are given space to construct their representations. This could be done, for example, via the integration of the four types of planetary awareness (Morin, 2001) when

devising class activities, prompting questions, organising fieldtrips, or any other pedagogical projects that the teacher envisages.

At the meso-level, the model can be used when considering the overarching philosophies for textbook writing choices, module objectives, strategies, and course content for teacher-training in early years and primary education. In terms of macro-level implications, the whole model or any combination of the three rhizomatically connected constellations can be used for policy development such as national curriculum framework objectives, reorientation of 'education for sustainable development', explicit learning aims for holistic education, and reconfiguration of conceptions of citizenship education towards Eco-ACHHE. The model therefore has implications in the educational system of Mauritius at micro-level teaching in the classroom, meso-level curriculum development and teacher-training, and macro-level national policy decisions. Some components of the model have been taken into consideration over the years as part of this PhD journey and these are discussed below in the third part of the chapter.

## 8.6 PART THREE: THE PHD JOURNEY

This section presents some of the outcomes, to date, of my PhD journey. I discuss how the PhD process has informed some of the key areas of my practice and also that of a few other colleagues, including critical friends. Beyond direct outputs like publications and workshops, the doctoral research process has had direct implications for my work, given my strategic position as a teacher educator and a contributor to curriculum development. Given the dynamics of the institution, some of these elements have also been taken into consideration in the practice of fellow colleagues in language subject areas. This highlights the processual dimension of my doctoral research, which has been iterative in terms of informing practice, notably due to the position I occupy in the institutional structure and the educational system of Mauritius. I discuss these iterative and processual elements in the section 8.4.1 and I also

discuss the ethical aspect of these decisions in section 8.5, as they are directly linked to my researcher positionality. Lastly, I briefly discuss publications and academic workshops linked to my doctoral work, before concluding with a brief overview of potential pathways for post-doctoral research.

### 8.6.1    Recommendations in action

In this section, I discuss reflexively how the PhD process has informed my practice as a teacher educator and a curriculum developer, as well as how discussions that emanated from the study informed the practice of fellow colleagues in language subject areas. For the purpose of clarity, this section is divided into the following sub-sections: (1) recommendations in action in teacher education, and (2) recommendations in action in curriculum development.

### 8.6.2    Recommendations in action in teacher education

As a teacher educator, I have participated in a number of seminars over the years to sensitise tertiary level students about ecological issues, including the representations of NHAs and behaviours towards them. For instance, I recently participated in a series of three two-hour seminars with primary school level trainee-teachers on the topic of ecolinguistics. The first session was to introduce them to ecolinguistics as a field of study and to encourage them to reflect on their own discourses about nature and the environment, as well as the potential impact that their discourse has on children's learning and construction of knowledge about the biosphere. The second and third seminars were directly related to integrating an Eco-ACHHE philosophy into the reflective practices of the trainee-teachers.

The second session was focused on mindfulness and meditation in a small grassy zone on the premises of a local tertiary education institution, and the third session was an ecological, cosmocentric reading of the book *You Are Stardust* by Kelsey (2016). This cosmocentric perspective of humans, NHAs, and all life and matter having a "psychic-spiritual as well as a

material dimension" (Scharper, 2007, p. 362) enabled the trainee-teachers to build awareness about the complex, hologramic (Morin, 2008) interrelatedness of living beings. The second seminar of the set focused on eco-mindfulness and education which was the foundation leading into a creative writing activity about seeing the world through the eyes of another species that was present in the grassy area where everyone had been sitting. Encouraging the trainee-teachers to see from the perspective of another living being was aligned with the Eco-ACHHE philosophy and was a stepping stone towards developing the seminar participants' ecological awareness, empathy towards other living beings, and awareness of their discourse about NHAs.

With regard to recommendations in action for teaching, components of the Eco-ACHHE philosophy have been incorporated into strategies and activities for drama and performing arts. Tertiary level students have carried out miming activities which implicitly encourage the development of empathy towards NHAs and expanding understandings of alterity. As the students mime the NHA movements and general traits, they are encouraged to put themselves into the skin of the 'other' and to learn about body positioning and movement while 'being' the chosen NHA. In addition to this, students have also carried out small role-plays performing as anthropomorphised NHAs who wear costumes and can speak. This adds an additional layer of empathy towards NHAs and strengthens the students' constructions of knowledge about the biosphere in terms of anthropoharmonic and cosmocentric thinking.

The Eco-ACHHE philosophy has also been infused in programme development, with ecolinguistics listed in the course content for one English language module that was developed as part of an undergraduate level programme. As well as this, it forms part of my own teaching for an undergraduate creative writing module where students are encouraged to develop Earth-identity and awareness of the language they use to express their ideas and visions of the natural world and their own lives creatively. For example, the element of eco-mindfulness was incorporated at the start of several sessions to guide the students to visualise the world around

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them, to bring more mindful presence to their holistic connection with their own bodies as part of the cosmos, and to stimulate their imaginations for writing activities which followed.

By taking into consideration the findings of the study related to first-hand experiences and encounters with NHAs as significant for building empathy and beneficial discourse (Stibbe, 2014), the students were also taken on field trips to both busy city areas and to quiet garden spaces. The former location was chosen to develop mindfulness and mindful-observation the daily lives and coexistence of people, street dogs, pigeons, and other things that they considered to be interesting to write about for a flash-fiction task. The latter garden space was like a park and students were guided to sit in silence amongst the trees near a pond and to observe the flight of the dragonflies, the behaviours of the small rodent creatures further down near the water, and the presence of frogs, fish, and other NHAs, to write Haiku and Tanka poems, both of which are Japanese poems with specific syllable and line requirements.

Discussions, during regular informal seminars, with colleagues within the setting of an institutional doctoral 'Critical Support Group' also provided opportunities for the implementation of some key ideas emanating from this PhD. Interestingly, though this study focuses on data sets for primary school level, some of the ideas and reflections have impacted on colleagues doing secondary level teacher-training. For a critical friend with whom I had discussed the methodology of the study, the methodological reflections of my doctoral work were invested in an undergraduate research methodology course, specifically to include eco-critical discourse analysis (ECDA), as well as research and environmental ethics. The critical friend, who is a fellow colleague, felt that our discussions had been enriching and that ECDA would be an interesting addition to data collection methods that could be covered with the students in order to raise methodological awareness and data analysis possibilities.

For one colleague, the discussions triggered further reflections for two undergraduate modules in sociolinguistics and discourse analysis. The first module concerned the colleague's implementation of a general epistemic stance whereby sociolinguistics also incorporates the non-human realm and the ecosystem at large; continued discussions and professional activities together provided the basis for a co-authored paper with this same colleague. The second module invested anthropoharmonism and types of discourse, such as discourse as texts, including CL and textbooks. One activity that the colleague carried out was the analysis of discourse and texts from an ecolinguistics perspective with the objective of students developing knowledge and awareness on the intermeshing between discourse and NHA representations; they were then expected to reflect on how these aspects have impacts on language teaching and learning.

### 8.6.3 Recommendations in action in in curriculum development

My study is directly linked with curriculum development in the field of languages. Beyond primary school level curriculum development, however, the research was also pertinent and instrumental in tertiary curriculum development for teacher-training. This is particularly important in the context of this research, as it takes into consideration teachers as an important link between curriculum and children. Concomitant to the incorporation of knowledge from the thesis into teacher-training practices, tertiary curriculum development allows the crystallisation of the main recommendations of this study and the Eco-ACHHE model into policy and practice at the meso-level.

The undergraduate modules mentioned in the previous section were all designed by partly taking into consideration the Eco-ACHHE model and elements pertaining to the theoretical and methodological framework of the study. There are modules for teacher-training that explicitly integrate ecolinguistics as a course component, including a French module based on alternative perspectives on language studies that was also designed with ecolinguistics as a

core component. Likewise, an elective module for an undergraduate primary level teacher-training course, in which I participated as module developer, was geared partly towards the problematisation of the 'environment' and the 'language environment'.

The research journey has been significant in my practice as curriculum developer and textbook writer and, through discussions and collaborative work with other textbook writers, the significance extended to other grades and subject areas as well. The main recommendations emanating from my study were applied in textbook development and, at the most basic level, utilitaristic anthropocentrism as well as speciesism were actively filtered out or avoided in textbooks. This included ideological devices, stories (Stibbe, 2015) and NHA representations which could potentially relate to destructive discourse, such as anthropocentric and speciesist elements. Instead, CL related texts and material were either neutral or explicitly geared towards positive discourse; one example is the Grades 5 and 6 French textbooks where anthropoharmonism was an important element in terms of pedagogical and support material choices, as well as the orientation of the units.  For instance, a whole unit in the French Grade 5 textbook was based on environmental protection and featured anthropoharmonic texts. Anthropomorphic NHAs were also instrumental in certain texts as they represented the voice of NHAs expressing themselves on crucial environmental issues.

The text in the Grade 5 part 1 French textbook, in the unit '*Protégeons notre environnement*' (Let's protect our environment) was an extract from *Du Grand voyage de Dilans dans l'Océan Indien*, (The Great Voyage of Dilan in the Indian Ocean), a book realised in 2014, in the context of the ISLANDS project of the 'Commission de l'Océan Indien' which aims at supporting sustainable development in the Indian Ocean region. The extract features a mildly anthropomorphic stonefish as the main character and the textbook writer's NHA representations informed her choice of text, which encompasses the ideology and representations of the original author, as well as the organisation which commissioned the

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book. This shifted the focus away from the human as the focal point and allowed space for the active meaning-making child to construct knowledge through didacticism and positive discourse. Decentralising the perspective away from humans can also have important implications on how education is conceived as a way to help develop ecological reasoning in connection with 'empathy through alterity'.

In other units of the same textbooks, recommendations in action can be observed through the use of positive discourse that was integrated into different areas where texts were used as support material. In the Grade 6 Part 2 French textbook, for example, the unit '*Balades dans les îles de l'Océan Indien*' (Strolling in the Indian Ocean islands) valorises the flora and fauna of the different Indian Ocean islands. While the texts fulfil didactic functions, the choice is aligned with positive, beneficial discourse and is also based on the objective of developing ecological awareness and an anthropoharmonic perspective.

Anthropoharmonism and the Eco-ACHHE philosophy were also observed as recommendations in action for the Grades 3 and 4 English curriculum materials. I was involved in the writing of these materials and, following discussions with other panel writing members, neutral NHA representations and beneficial discourse were included in the textbooks and stories. I included a module explicitly on nature and the environment in the Grade 3 Part 2 English textbook, which included language activities related to protecting the environment and caring for NHAs. I wrote a story alongside this aforementioned textbook, as a complementary literacy material, which specifically focused on the lives of a family of deer when their natural forest habitat is destroyed by pollution and deforestation. One didactic aspect of the story was to encourage children to reflect on the impacts of pollution and deforestation on the lives of forest NHAs and, more generally, on the local environment. In this way, Earth-identity and anthropoharmonism formed part of the Grade 3 children's learning and, as Scharper (2007, p. 361) states, "working towards an anthropoharmonic understanding of human-nonhuman

relationships suggests that we as humans are in a type of 'dialectical contingency' with both animals and the rest of the created world".

For the Grade 4 English textbooks, ecological awareness and responsibility were infused through language activities in several units of the textbooks. Additionally, the Eco-ACHHE philosophy can be noted for unit 3 'The seaside', in the Grade 4 Part 1 English textbook, where I wrote another complementary literacy story about a little girl discovering a mermaid in a shell at the beach. Whilst playing together the tiny mermaid also talks to the girl about her aquatic friends and how important it is to take care of the ocean so that the mermaid and her friends can live safely and happily. In unit 7 of the same textbook I also incorporated an eco-mindful meditation activity in connection with cosmocentrism; the activity related to the theme of the unit and focused on the development of vocabulary and understanding of sequencing in English, whilst encouraging children to develop empathy with and appreciation of the natural world implicitly, through a combination of relaxed breathing and imagining themselves as a flower, mountain, water, and a star in the cosmos.

## 8.7 ON THE ETHICS OF CURRICULUM INTERVENTION

The concomitant implementation of knowledge and findings from this study into my practice during the PhD process has ethical implications, notably concerning the interventionist dimension. While there was no interventionism at the level of my data sources and participants, the fact that I consciously implemented knowledge in module teaching, course content and curriculum materials is representative of the negotiation processes intrinsic to the management of my different professional identities. I therefore considered it my ethical responsibility, as a result of the knowledge gathered during my pathway as a doctoral level researcher, to ensure that the discourse in the textbooks I was contributing to were not destructive, and converged towards Eco-ACHHE.

The stories I wrote were based on the same principles of ethical and ecological responsibility; my identity as a teacher educator has been continually informed by my researcher knowledge in a way that allowed me to incorporate the Eco-ACHHE to bring ecological awareness through linguistic knowledge, ecological knowledge, cultural and metacultural awareness. As part of my professional responsibilities I also presented part of my methodology in a local research conference in 2019 where trainee-teachers were invited and they were able to develop their awareness on the intricate links between discourse and NHA representations in curriculum. The symbiotic relationship between my different identities as researcher, teacher educator, textbook writer, and curriculum developer (including tertiary level courses) helped towards the synthesis and integration of research knowledge emanating from the thesis into my own and other's professional practices.

## 8.8   CREATIVE PROJECTS AND FUTURE RESEARCH

The process of engaging in this doctoral study has shaped my reflections on the ethics of curriculum intervention for ecologically-responsible education and professional practices, for recommendations in action in teacher education and curriculum development. It has also motivated me to take into consideration ecological issues, globally and within the local Mauritian context (see section 1.5.3 in Chapter 1 for an overview of environmental issues) for building ecological awareness and responsibility through creative writing.

For the past three years of this doctoral journey, I have engaged in ecopoetry writing, which is poetry that explores the relationships of nature, culture, language, perception, and moreover, nature as threatened by human activities. In this creative pursuit, I am working on a poetry collection with nature and environmental issues in Mauritius at the heart of the writing. The country is still in the wake of the 2020 MV Wakashio oil disaster, which saw the ship run aground on the coral reef and spill an estimated 1,000 tonnes of oil into the ocean off the south

coast of Mauritius. I used ecopoetry as a form of commentary on the ecological devastation that the national has experienced since the island was colonised and two poems were published in a local newspaper (see Appendix VV) with country-wide dissemination.

Alongside shaping my reflections for ecopoetry writing, this doctoral study has also encouraged me to continue pursuing further research in ecolinguistics and education. So far, the process of carrying out this doctoral study has led to the following co-authored research outputs in peer-reviewed journals and academic conferences:

- 'Le poulpe qui existait pour être mangé : l'anthropocentrisme et le spécisme dans les manuels du cycle primaire mauricien' (The octopus that exists to be eaten: Anthropocentrism and speciesim in Mauritian primary school textbooks), published in *Cahiers internationaux de sociolinguistique,* 2017.

- 'Methodological choices in ecolinguistics research in education: Negotiating quantity and quality dimensions', paper presentation at 'Epistemology, Methodology and Research in Language Studies', Mauritius Institute of Education, Mauritius, 2019.

- 'Of Octopuses and Wolves: An overview of anthropocentrism and speciesism in primary school textbooks in Mauritius', poster presentation at 'Intersections of Language and Nature: Documentation, Conservation, and Access', University of Pittsburgh, Pennsylvania, USA, 2019.

- 'Ecological Discourse and Literacy: An eco-critical discourse analysis of Grade 3 Stories', published in *MIE Journal of Education*, in print.

- I also co-organised and hosted a webinar, with Professor A. Stibbe, Dr V. Florens, and Dr S. Oozeerally as the three guest speakers, on the theme of 'Ecolinguistics, Ecology and Education', July 2020.

Some possible avenues for further research would be to explore the Eco-ACHHE model for micro-level teacher practice in primary school classrooms, and for meso-level teacher-training as well as textbook writing in relation to holistic education at primary level. Other prospects for further research are based on two themes which emerged from analysis of the data of this study. One aspect is to investigate the degree of ideological discourses on NHAs specific to Kreol Morisien, and the second is to expand my discussions on 'ego-anthropocentrism' by exploring this concept and constructions of knowledge about nature with children in the egocentric stage of child development. A final idea on which I have been reflecting, especially in relation to the limitations of the study, is to conduct a follow up for Data Set 3 and carry out further group interviews with the same participant children to explore their representations of NHAs five years later, since the initial data collection, and draw thematic comparisons directly related to the ECDA model informed by the work of Stibbe (2015).

As a final word, ecolinguistics is a growing field of study and the PhD journey has been enormously enriching for both my professional and personal development. I have gained copious amounts of knowledge and feel excited to continue learning and growing as an academic in this field. I feel that the Eco-ACHHE model, as a culmination point of the research findings and recommendations, yields the potential to not only contribute to reconceptualising ecologically responsible holistic education within the primary school curriculum of Mauritius, inclusive of contextually and culturally appropriate teacher-training within primary level courses, but could be used to reflect on ecological education internationally also. This reconceptualisation of ecologically responsible holistic education could potentially be

applicable in other countries and encourages a 'rethinking' of Education for Sustainable Development in alignment with the key principles of anthropoharmonism, Earth-identity, and humane education that includes not only awareness of the global climate change and environmental issues, but also the discourse and language used to discuss such issues. This, in turn, provides a possible educational pathway for children, and those involved in their lives whether as parents, teachers, or other education stakeholders, that shapes the way we see the world and the way we see ourselves living harmoniously in the biosphere.

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