

CHAPTER 1: INTRODUCTION

1.1 AN OVERVIEW

This study aims to explore and analyse the written discourses of natural history from the lens of a genre analyst. Drawing on both applied linguistic theories on text genres and environmental interpretation principles, the construction of meanings in messages and their functions, which are inherent and driven by disciplinary cultures and professional practices in the field, is examined.

The nature of this research is interdisciplinary. Several disciplines, namely languages and linguistics, biological sciences and Environmental Humanities (in the aspects of communication and interpretation) are dealt with. Cross-disciplinary insights and multiperspectival findings are found through innovative inquiry and analysis of genres within a collection of natural history magazines, field guides and other related printed documents.

Approaches such as ethnography and grounded theory are used to inquire about situated discourse behaviours in this professional domain and to discover the abstractions of “process, action, or interaction grounded in the views of participants [or within the information constructed by them]” (Creswell, 2009, p. 9). A combination of research methods such as document review and observations are used in conjunction with a multidimensional analytical perspective model for professional discourse analysis proposed by V.K. Bhatia in 2004.

A thick description on written genres in the field of natural history, combined with some genre-based conceptual models that embed professional communication in discourse, is what this study is all about.

1.2 KEY CONCEPTS & TERMINOLOGIES

1.2.1 Natural history

Notwithstanding that it is a branch of Natural Sciences, natural history is descriptive in nature and has very little to do with the notion of ‘history’ as how we conceive of it today. According to Steven G. Herman (2002), the term itself was “an archaic definition (Oxford English Dictionary) [and when it] was coined, ‘history’ meant ‘description’ [or] ‘systematic account’ ... [hence] natural history is a description of nature” (p. 933). It is important to denote that the full term has no diachronic implications, yet it comprises a whole gamut of descriptive accounts of “the scientific study of plants and animals in their natural environments” (Herman, 2002, p. 934) from the beginning of life till its end of time.

To a certain extent, natural history also encompasses the study of rocks, minerals and fossils (of the geological sciences), earth formations, climates and environments, human impacts and evolution of life and the pervasive diversity of life including animals, plants and micro-organisms. For the purpose of this study, ‘natural history’ refers to the description and depictions of both the animal and plant kingdoms in text and discourse. Extremely technical or purely scientific representations are not considered or examined as the study focuses on information, which are more accessible to the practicing community and the general public.

1.2.2 Genre

In the simplest form of definition, ‘genre’ in this study refers to the types of text that are found in the discourse within the discipline of natural history. Generally, it can also be represented as the manifestations of ‘categories’ and ‘forms’ containing typical configurations of knowledge of specific organisational structures within, beyond and cross-disciplinary boundaries (see Chapter 2 for more information). At another level, genres are also linked to “socio-cognitive realities” (Bhatia, 2004, p. 32), which they

display “typical cognitive structuring realizing communicative purposes” (Bhatia, 2004, p. 32) that are operationalized through various linguistic features in which they are constructed from.

Hence, for this study, the term ‘genre’ means contextualised text and discourse of natural history with specific structural organizations of information and the discursive construction of it by the disciplinary culture and the professional practices that are associated with it. Although genres also represent “discourse as social practice” (Bhatia, 2004, p. 19) to a larger extent and have a socio-critical perspective for examination, this study merely covers it as and when the term is used.

1.2.3 Interpretation

The adjective ‘interpretive’ or ‘interpretative’ and noun ‘interpretation’ used in this study refers exclusively to the concept and principles of ‘nature interpretation’, ‘environmental interpretation’ or ‘heritage interpretation’ outlined and introduced by Freeman Tilden in 1957. According to him, the function called “Interpretation”, is defined as “an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information” (Tilden, 1957, p. 8). Other definitions and detailed account of interpretation principles are covered in Chapter 2.

Framed within the discourse of natural history, any sub-variants of interpretation seen in this study will refer to the act of ‘interpreting’, a communicative strategy that realises its principles to reveal, relate or provoke experiences through discursive constructions of natural history genres to deliver information about animals or plants. Hence, the term ‘interpretation’ or any variants in relation to it mentioned in this study, will conform to this exclusive definition, but does not limit itself from other dictionary meanings if its explicitly stated.

1.3 BACKGROUND OF RESEARCH

1.3.1 Natural history

Understanding and appreciation of nature and anything that is connected with it are studied through a body of knowledge called ‘natural history’. Its label originates from the translation of the Latin *naturalis historia*, which meaning has changed over time in human history. Nevertheless, it continues to exist alongside with us in various manifestations through discourses mediated by education, media, public awareness campaigns, travel and tourism, hobbies and leisure, scientific research, etc.

A closer look at natural history reveals its differences from the Natural Sciences. It may consist of both biological and geological sciences but is distinct from the study of natural philosophy (or its counterpart) that refers to modern physics and chemistry. It tends to be more descriptive and often based on the observational study of natural elements as opposed to scientific experiments and analytical study of nature. Hence, natural history is “usually published in popular magazines rather than in academic journals” (WordNet Search, n.d.). Naturalists are those who study the topic and sometimes are called the ‘fieldwork scientists’.

In today’s contemporary living, natural history is associated with museums and tends to cover mainly animals and plants (of biology), modern geology and a few others, on paleobiology that study fossils that are millions of years old to discover the evolution of life. For those with knowledge of nature, in particular of plants and animals in their natural environments (habitat and ecological systems), natural history is mainly concerned with information pertaining to the “identification, life history, distribution, abundance, [classification] and inter-relationships ... [including the] aesthetic component” (Herman, 2002, p. 934) of it. Eventually, these features form professional disciplines such as botany (plants), zoology (animals), ornithology (birds), entomology (insects), mycology (fungi), etc. and promote specialist hobbies in the world of natural

history. As it contains rich, specialised and niche descriptions, specific genres (or text types in general – see Chapter 2 for details) are invented for its discourse community. These genres are the *foci* of this research and they will be thoroughly dealt with in Chapter 4.

1.3.2 Origins of natural history

The practice of seeing beyond the human world has been “the oldest continuous human endeavour” (Natural History Network, n.d.-a) in history and was essential to our ancestor’s survival needs. The roots of natural history were existed since ancient times when Aristotle and other philosopher elders recognized and studied the natural world of living and non-living. Seminal works and the oldest manuscripts were written during the 15th until the 18th century by the Europeans, ancient Greeks and Arabic scholars that describe both primitive and complex life forms encountered and observed.

Spanning the ancient Greco-Roman world to the medieval Arabic world and further extending its influences through European Renaissance naturalists at isolated regions around the globe, natural history pioneers have spread the discipline world-wide, and probably the most prominent icon today is Charles Robert Darwin with his theory of evolution and species origination, and the very familiar European-encyclopaedic works of Gaius Plinius Secundus (or better known as Pliny the Elder) in his *Historia Naturalis* volumes (a total of 37 books). The encyclopaedia was the oldest and largest works since the days of the Roman Empire that documents the entire field of ancient knowledge about nature. Upon his demise, his tradition is then continued by his inspired accomplices and descendants as it laid a solid foundation for later compilations of natural history covered in breadth, transcending through time as a valuable work in today’s modern world. Men like Alfred Russell Wallace, Joseph Banks, Alexander von Humboldt, E. O. Wilson and Aldo Leopold were all great naturalists in the 18th and 19th centuries (Herman, 2002, p. 933-934).

By tracing back to the origins of natural history, we seek insights into today's "nature order deficit" (Natural History Network, n.d.-a), a syndrome of lost connectedness to the natural world as a result of declining practice of both the art and science of the subject matter, a loss that cost us "social and environmental calamities" (Natural History Network, n.d.-a) and austerity. It is only through a deep appreciation of what natural history entails since the time of its birth that we may find some answers to live sustainably with the forces of nature.

1.3.3 The Malaysian context

The origin of natural history in Malaysia dates to the time of pre-modern life, a century and a half years ago when the Victorian naturalist Alfred Russell Wallace first set foot in Singapore in 1854 and began his epic journeys in the Malay Archipelago that makes up Malaysia, Singapore and Indonesia today. He had travelled more than 60 separate journeys spanning 14,000 miles in his trips during which he had discovered exotic peoples, flora and fauna. This had earned him a collection of more than 125, 000 natural history specimens of large mammals, tiny insects and bird species from the Malay Archipelago (which includes Malaysia), now kept at the British museums (Wallace, 2000; Highbeam Research, n.d.).

Following Wallace's footsteps, natural history has been given a considerable amount of importance by the British expatriates, who were fascinated by the lush natural heritage of the land pre-dating the country's independence. This was evidenced from the establishments of early natural sites and museums throughout Malaysia such as:

- Taiping Lake Gardens in 1880 – a zoological urban parkland (Chong, 2010)
- Botanic Gardens Penang in 1884 – also known as the "Waterfall Gardens" (Wcities, n.d.)

- Perak Museum in 1886 – by British Resident Sir Hugh Low; oldest in Malaysia to showcase natural history of the Kinta Valley (taiping.ws, n.d.)
- Forest Research Institute Malaysia (FRIM) in 1929 – founded by the British colonial forest scientist known as F.W. Foxworthy; pioneer in tropical forest research within the country and abroad (FRIM, n.d.).

The documentation of natural history by the British administrators in Malaya through field notes and specimens' collection resulted in the need for publication of these studies. Thus, the birth of the Malayan Nature Journal and Malaysian Nature Society (MNS) in 1940 (MNS, 2010, p. 3). It was the most crucial historical event of the country, as MNS has now become the oldest scientific and non-governmental organization dedicated “to promote the study, appreciation, conservation and protection of Malaysia’s natural heritage” (MNS, 2010, p. 2) and in realizing the need to sustain and conserve the natural world (or natural history) for the benefits of all Malaysians and the future generations.

After achieving independence, other natural history non-governmental organizations were formed such as the Borneo Research Council in 1968 and the Worldwide Fund for Nature (WWF) Malaysia in 1972, and followed by many other natural history-related environmental entities today such as the Environmental Protection Society Malaysia, Sahabat Alam, Centre for Environment, Technology and Development Malaysia (CETDEM), EcoKnights, Global Environment Centre (GEC), TRAFFIC Southeast Asia, Wetlands International Malaysia, Borneo Resources Institute Malaysia, etc. that addresses contemporary issues of biodiversity conservation, climate change and environmental concerns (MENGO, 2009). More and more natural appreciation outlets were subsequently established such as the following:

- National Museum in 1963 – housing archaeological, ethnographic collections and a small natural history gallery (Bee, Leinbach & Zakaria, n.d.)

- Penang Bird Park in 1988 – first bird park in Malaysia (tourist-attractions-in-malaysia.com, n.d.)

As Malaysia moves forward as a developing post-colonial country, various laws and regulations pertaining to the protection of natural history have been enacted and transpired by modern environmental pressures including the Land Conservation Act 1960, Wildlife Conservation Act 1972 reformed as the Malaysian Wildlife Protection Act 2010 recently, Environmental Quality Act 1974, The National Forest Policy 1978 revised in 1992, National Parks Act 1980, National Forest Act 1984, Fisheries Act 1985, National Policy on Biological Diversity 1998, National Environment Policy 2002, International Trade in Endangered Species Act 2008 and many other state's enactments and ordinances. These legislations are governed and enforced by inter-connected governmental bodies and ministries who uphold the nation's natural heritage and foresee environmental developments of the country e.g. the Wildlife Department (PERHILITAN – since 1972, formerly known as the Game Department), Department of Environment (DOE – since 1974), Ministry of the Natural Resources and Environment (NRE – since 2004) and Ministry of Energy, Green Technology and Water Malaysia (KeTTHA – since 2009).

Prior to the enactment of national policies and entities to govern and manage biodiversity, several global developments have taken place in respect with it. Bestowed with a rich biological diversity in Southeast Asia, Malaysia has been listed as one of the mega-diverse centres in the world, ranked twelfth with an index of 0.809 of the National Biodiversity Index for world comparison of genes, species and ecosystems by the renowned Convention on Biological Diversity (CBD, 1992; Government of Malaysia, 2007, p. 4). Malaysia has become a signatory for CBD at the Earth Summit in Rio de Janeiro since 1992, expressing commitments and participation in sustaining the world's natural history, being the most urgent issue of the modern era faced by mankind.

Subsequently, Malaysian researchers in biological sciences have addressed their concerns for the need to establish a natural history museum for the country to provide a systematic national repository of the flora and fauna of Malaysia; to promote the roots and fundamental knowledge of the nature to the public; and to advance in research and education through collaboration within and beyond the country for conservation and sustainability (Government of Malaysia, 2007, p. 6-7).

Hence, by 2006 at the Fifth National Biodiversity and Biotechnology Council, a framework for the Natural History Museum (NHM) was developed (Government of Malaysia, 2007, p. 1). Eventually, NHM was established on June 2008 (as the implementation was completed) and now serves as “the research arm for the Department of Museums Malaysia in researching the areas of flora and fauna” (Omar, 2010) that plays a vital role in pooling Malaysia’s biodiversity resources and documenting them to meet the objectives of the Global Taxonomic Initiative within CBD, thus enabling “benefit sharing of the genetic resources found in the country” (UNDP in Malaysia, 2010). NHM marks an important milestone in our modern and civilised society that “embodies the importance we give to nature as a fundamental area of knowledge” (Cheang, 2004).

We have come a long way to have arrived at today’s state of development of natural history in Malaysia since the advent of ancient explorers in the region and the British officers who initiated it. The Department of Museums Malaysia now is custody to the many natural specimens of the earliest records of our nation’s heritage, the genesis of species that predates the country’s independence and therefore, taking its leap to be inspired “to become Malaysia’s Centre of Excellence for Research and Reference on Biodiversity and Geodiversity” (UNDP in Malaysia, 2010) to fulfil its pledge for CBD to conserve the nation’s natural heritage and national treasure.

1.3.4 A potential field of inquiry

Today and in recent years, we've seen a decline in the practice of natural history, let alone the awareness of the living world in which we're residing in. The study of nature has been neglected in many ways due to the popularisation of new cultures that have led to "the use of the terms 'natural history' and 'naturalist' fell into disuse and even disrespect" (Herman, 2002, p. 933). In spite of this, we see the re-emergence of natural history as it is intertwined with today's most pressing global environmental concerns arising from natural calamities, global extinction of biodiversity and depletion of natural resources.

The rebirth of natural history with its roots interconnected with all branches of science and the Humanities in reciprocity (Weisberg, n.d.) has immense potential for research and knowledge creation. Natural history is about "promoting an understanding and appreciation of the living and nonliving world" (Weisberg, n.d.) and therefore, nurturing a nature-literate citizenry through research and innovation is pertinent to that process. Moreover, it is interdisciplinary. "While grounded in the Natural Sciences, it engages the Humanities, Social Sciences, and creative arts, and it informs technical fields such as medicine, agriculture, forestry, and environmental management" (Natural History Network, n.d.-b). Such a claim further accords to it the dire needs and significant contributions of the field to humanity.

Within the next couple of years, we shall witness the expansion and rapid growth of natural history as it informs, shapes and energizes environmental efforts and solutions. Hence, we are compelled to seek no further than to re-discover what natural history is all about and to promote interdisciplinary research works within this line of inquiry. As a matter a fact, several initiatives which are leading the nation's endeavours in education, research and postgraduate scholarships in relation to natural history have taken place in Malaysia, e.g.:

- Institute of Biodiversity, Wildlife Department (PERHILITAN, n.d.-a)
- Tropical Forest Biodiversity Centre, FRIM (TFBC, n.d.)
- Institute of Biodiversity and Environmental Conservation (IBEC), Universiti Malaysia Sarawak (UNIMAS, 2009)
- Institute of Biological Sciences (ISB), University of Malaya (ISB, n.d.)
- PhD in Natural History, IBEC, Universiti Malaysia Sarawak (UNIMAS, n.d.)
- etc.

Interdisciplinary research on natural history will soon be given more emphasis and priority, and along with it, the foundation and nation's aspiration to solve environmental problems of the society. Thus, it became a prominent field of inquiry for research.

1.4 STATEMENT OF THE PROBLEM

We are living in an age of urbanisation and globalisation which we are thriving in knowledge economy and information technologies, yet we haven't sufficiently acknowledged the depth of seriousness the environmental crisis at stake, the rapid decline of biological diversity and unprecedented moment in history when natural history (of animals, plants and rocks) was driven to near extinction. Why do we forsake our ancestor's practice of spending their lives understanding the natural surroundings they live in?

We are obviously disconnecting ourselves from the natural world as we rely on passive entertainment that breeds our ignorance and disinterest. On the other hand, perhaps the term and essence of natural history hasn't been practiced effectively through attentive communication and delivery by the professionals who tell us about them. Or maybe, the missing link was the lack of awareness and interest about the environment or natural history as per se, because of the pre-conceptions that its topic is always scientific and technical to the laymen? What about the underutilised environmental centres,

natural history museums and materials that are supposed to instil knowledge to the population?

In a nutshell, natural history information has failed to become meaningful or make sense to the hearer/reader, thus discouraging them from accessing the knowledge within. The formation of this information by professional experts and naturalists also poses an intriguing question of whether it had been constructed according to the anticipation of hearer/reader's experience by the speaker/writer and in accordance to the disciplinary norms and practices of natural history. These dilemmas have to be studied on, analysed and solved to promote sustainable living and the appreciation of the natural world and the environment.

1.5 AIMS OF THE STUDY

The purpose of this study is two-pronged. First, it analyses the written discourses of natural history by using a genre-based approach. Then, the rationale and the construction process of text are discovered through an understanding of the underlying disciplinary cultures and professional practices which the text reflects. Objectives of the study are operationalized into research questions.

1.6 RESEARCH QUESTIONS

Two inter-related research questions are devised for this study:

1. What are the genres in natural history?
2. How do the disciplinary culture and professional practices shape the integrity of these genres in natural history?

1.6.1 Genres in natural history

Various constructs and key concepts of genres defined by existing literature will be used to study the discourse of natural history e.g. the concept of 'register', 'genre', 'discipline', 'genre sets', 'genre chain', 'system of genres', 'genre colonies',

‘macro/micro genres’, ‘sub-genres’ and ‘hybrid/mixed genres’. At this stage of the research, a new breed of genre colony called ‘interpretive genres’ is suggested to be conceived from the discourse of natural history for the discipline and extends beyond it to overlap with other disciplines in the professional domain.

1.6.2 Disciplinary culture and professional practices in natural history

Bhatia’s 2004 multidimensional analytical perspectives will be used as the primary framework for genre analysis of the discourse of natural history described from the textual, ethnographic and socio-cognitive perspectives of his model. A parallel environmental interpretation or communication theory known as the “Heritage Interpretation Principles” (Tilden, 1957) is employed to explain the professional practices and disciplinary cultures of natural history that interplay with genre concepts to achieve specific communicative functions in the information delivery process. At this juncture of the research, it is believed that similar genres of the discourse of natural history share the same composition of moves, which realise a common set of communicative functions that is ‘interpretive’ in nature. The structural arrangements may differ as long as the disciplinary imposed moves are found in the genre being studied.

1.7 RATIONALE & SIGNIFICANCE OF THE STUDY

1.7.1 A research gap

There has been a considerable amount of genre studies and research (see Chapter 2 for more information) done on genres in the professional domain e.g. in business (sales promotion letters, job application letters), law (legislation reports, arbitration judgments, legal acts), marketing (home adverts, university adverts, property adverts), medicine (medical reports) but none so far has been found in the discourse of natural history. The

only related research is a genre analysis study of academic abstracts and introductions in Conservation Biology and Wildlife Behaviour research articles (Samraj, 2005).

On the other hand, research that focuses on interpretive communication of natural history (See Chapter 2 for more information) has been carried out albeit very limited or with no emphasis on linguistic aspects or genre concepts – most of these articles either measure visitor's perceptions, psychological variables such as attention span and effects of signage or evaluate the effectiveness of interpretive programs carried out at a particular natural site from the perspectives of their stakeholders. So, this study would become an early interdisciplinary research initiative that fills in the gap in the literature of linguistics, natural history and environmental interpretation or communication studies.

1.7.2 Pedagogical implications

In terms of pedagogy, mapping genres across new disciplines can provide rich insights and implications for natural history education and applied linguistic studies. A deeper understanding of genres encourages teachers and learners to employ appropriate resources or materials and relevant methodologies in teaching and learning. The gap in literature for genre-based studies can also be resolved by extending what we've already known about genres in the professional domain to novel disciplines such as the field of natural history. Research like this study will inject interdisciplinary interventions into pedagogical teaching and learning as well as advancing genre-based linguistic inquiry.

1.7.3 Professional training and development

Language for Specific Purposes or LSP, is another potential outlet that this study is aimed to promote. Genres of a particular discipline such as natural history, are the building blocks for professional training and development. With a detailed account on how and why genres in the discourse of natural history are discursively constructed,

disseminated and consumed by discourse participants, modules of LSP teaching and learning for professional communication can be developed for practical use at the target situation. Descriptions of linguistic features, disciplinary norms, conventions, rhetoric and discursal features from genre analysis will provide the specificity essential for LSP training to targeted audience who practices natural history such as naturalists, nature writers, guides, park rangers and museum curators.

1.7.4 Promoting tourism and upholding our natural heritage

Malaysia is blessed with a mega-diverse biological haven which tourism based on natural and heritage sites generates substantial amount of revenue to the country. A caveat is that the industry involved in eco-tourism and nature-based tourism may have limited or no access to the knowledge of natural history. Therefore, it is important for those participating in the industry to pick-up relevant knowledge of the field by accessing multi-varied genres that are available for their consumption. These genres may be constructed with these audiences in mind and contain layman's discourse, which would have to be diluted from the generic integrity of mainstream genres of the discourses in natural history. This study will try to address such concerns and explicate how genres in natural history can contribute towards tourism and promotes it by upholding our natural heritage.

1.7.5 Environmental awareness-building, appreciation and conservation

There has been a time in the past when natural history was regarded highly by those who pioneered the study of nature and those who were inspired to follow in their footsteps. Unfortunately the discipline came to a decline with the digital era revolutionizing urban developments and isolating human experiences from the natural world. The resurgence of it in the few past decades is partly due to the deterioration of the global environment causing mankind to be threatened by natural calamities and

disasters displacing human population and affecting natural resource consumptions. A renaissance is what we need for natural history education (Trumbulak & Fleischner, 2007) for the promotion and elevation of human understanding of the discipline and how it relates to the environment.

For a closer examination of the environment, we need to access the genres found in the discourse of natural history and understand the description of knowledge embedded within them. This study will explore the intricacies of what composes the genres found in natural history and how do they realise communicative functions to build awareness of the natural world. Through awareness, participants will learn to appreciate nature and advocates conservation to protect and love the environment.

1.8 DELIMITATION OF THE STUDY

The scope of this study covers the range of resources and methodologies used; with relevant mitigation strategies whenever possible (see Chapter 3 for more information).

- Emphasis on written discourse of natural history – supplemented by other written materials/text and a few monologues from natural history related seminars to provide additional insights
- Only focus on Malaysian Naturalist (MN), a magazine published by the Malaysian Nature Society – supplemented by observations undertaken to obtain a holistic understanding
- Limited interpretive materials/text within the context of Malaysia – supplemented by foreign interpretive research journal articles, online networks and association websites
- Framing of natural history within genre analysis, supported in parallel by interpretation principles for professional communication

1.9 ORGANISATION OF RESEARCH REPORT

This report is divided into 3 main segments namely the preliminaries, content and appendices. The most important part of this study is the content segment, which is broken down into several chapters.

Chapter 1 provides an introduction to the field of research, some background information of the context (or setting) that is being examined and outlines the purpose, research questions and rationale for this study. Literature review relating to the research topics are covered thoroughly in Chapter 2, which includes relevant literary and scholarly developments in the field of inquiry, the inter-relationships between construct definitions, concepts, the object of study and evaluative reviews on the findings of past studies. Then, Chapter 3 explains the research design and methodology of this study in terms of corpus selection, data collection procedures, analytical frameworks and addresses several research issues pertaining to trustworthiness as well as ethical considerations.

Chapter 4 will present research findings and the author's discussion on topics that answer research questions of this study. The last chapter i.e. Chapter 5 will re-instate the purpose of the study and wraps up all research findings with concluding remarks and a summary to meet the requirements of research questions. Implications of this study to pedagogy, linguistic studies and professional communication are highlighted to spur interest in interdisciplinary research and possible future lines of inquiry.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The purpose of this research has been stated in the preceding chapter. To achieve it and to answer the research questions, it is necessary to conduct a critical review of existing literature. This review was carried out from the beginning till the end of the study throughout all phases of the research process and multiple information sources were used including books, Internet resources, peer-reviewed journals, periodicals and PowerPoint slides. The areas and topics of the literature that were critically reviewed are elaborated according to the following sequence: (a) discourse analysis (b) genre theories (c) genre analysis (d) generic integrity (e) interpretation.

2.2 DISCOURSE ANALYSIS

The advent of the “discursive turn” (Bhatia, Flowerdew & Jones, 2008, p. 1) in social science and humanities research has encouraged us to look at how language plays a role in the creation of world realities that surround us, therefore “illuminating the whole of social praxis” (Angus, 1998). This phenomenon has elevated the significance of discourse analysis in the discipline of linguistics and promoted interdisciplinary inquiries on linguistic behaviours beyond sentence level, “focusing primarily on the meaning constructed and interpreted as language is used in particular social contexts” (Bhatia, Flowerdew & Jones, 2008, p. 1).

Discourse analysis is grounded in theories and methods drawing on various disciplines such as sociology, psychology, communication studies, linguistics, to name a few, to study language use in the institutional, academic, workplace or professional settings. According to Brown and Yule (1983), discourse analysis covers “a wide range of activities ... at the intersection of disciplines as diverse as sociolinguistics, psycholinguistics, philosophical linguistics and computational linguistics” (as cited in Bhatia, 2002b, p. 41). Therefore, it has to employ various methodologies, procedures,

frameworks and approaches to understand the centrality of language/discourse in social practice, social formations, social behaviours or actions and socio-cultural worlds in which the language/discourse is situated within.

Hence, discourse analysts look at language from two levels within the discipline of ‘sociological linguistics’ (Halliday, 1973, p. 65, as cited in Bhatia, Flowerdew & Jones, 2008, p. 2). The first level adopts a macro-sociological view to see how language “serves to transmit the social structure, the values, the systems of knowledge [and the] pervasive patterns of culture” and the second level, a micro-sociological view, allows discourse analysts to understand and interpret the meanings of language used in specific contexts and situations (ibid.). These conceptions have given rise to various schools of discourse analysis and influenced the growth of various discourse analytical approaches such as discursive psychology, critical discourse analysis, conversation analysis, corpus-based analysis, multi-modal analysis, and many others. Genre analysis, one of these approaches is used in this research to present the study of language use in the disciplinary field of natural history, and how discourses of it function within the professional domain.

2.2.1 Historical development of discourse analysis focusing on genre analysis

A chronological overview of the field consists of three development phases which focus on the textualisation of lexico-grammatical resources, followed by the regularities or patterns of organisation, and then on the contextualisation of discourse (Bhatia, 2004, p. 3). Each tradition recognises “discourse as text, discourse as genre, and discourse as professional and social practice” (ibid.). Genre analysis has also grown in parallel with this development and evolved from its earliest form of linguistic analysis to a wider view of discourse analysis incorporating multiple perspectives and different genre description levels, thus reflecting changes that are brought about by these phases.

In the early days several decades ago, when formal linguistics was influential, language analysis primarily focused on the surface-level features such as lexis and grammar which are statistically significant in specialised texts and discourse. Language variations across texts of particular disciplines are described in terms of ‘registers’ (Halliday et al., 1964, as cited in Bhatia, 2004, p. 4) and such concern underpins important implications for applied linguistics in language teaching, especially in English for Specific Purposes (ESP). Distinctive lexico-grammatical resources in academic writing such as passives, tenses and nominalisations are popular interests at this time as well as the relationships between semantics and pragmatics of texts and intertextuality (as explained later).

Then, the focus on organisation of discourse became a more serious interest, looking at the cohesive nature of text and larger stretches of language use. Segregated patterns of organisation of information are analysed in terms of chunks of text that represent regularities of ideas, structures and purposes. Research at this stage introduces key terms such as ‘problem-solution structures’ (Hoey, 1983), ‘rhetorical structures’ (Widdowson, 1973), ‘schematic structures’ (van Dijk, 1988), ‘thematic structures’ and ‘macro structures’ (as cited in Bhatia, 2004, p. 8-9) in the field. In addition, researchers who analyse text as genre in both academic and professional discourse invented ‘move structures’ (Swales, 1990; Bhatia, 1993) to relate discourse patterning to specific communicative purposes served by the genres in question, based on the rationale and cognitive structures recognizable by their own ‘discourse community’ (Swales, 1990, p. 21). Genre theories have emerged since then and consist of three main schools or frameworks for analysing genres. They are the American school of genre studies known as ‘New Rhetoric’, the Sydney school of systemic-functional approach to genre, and the British ESP school (Hyon, 1996, p. 702-706; Bhatia, 2004, p. 10; Azirah & Norizah, 2011, p. 152-153).

The last phase looks at language use in contextual settings with wider and multi-perspective lenses at the professional, institutional and social levels. Contextualisation of discourse requires in-depth socio-cognitive understandings of genres which includes the discursive production, consumption and interpretation of them, as well as the accounts for the development of hybrid (mixed or embedded) genres, genre change, genre conflicts and tensions in the complex and dynamic world of discourse. Many of these concerns are reflected in the works of Berkenkotter and Huckin (1995), Bazerman (1994) and Bhatia (1997) (Bhatia, 2004, p. 12). In works related to professional and institutional genres, Bhatia (2004, 2008a, 2008c, 2010) performs multidimensional and multi-perspective analyses to explain how professionals use language the way they do at their workplace. This approach allows discourse analysts to study genres in action through socio-cognitive insights on how discourse actually operates in the context of their professional or disciplinary world. As we widen the role of context in a broader sense, discourse is further analysed in terms of their inter-relationships with the social context to investigate how it constitutes “social control, ... establish identities, ... communicate ideology, or ... influence and maintain social processes, social structures and social relations” (Bhatia, 2004, p. 11). Such approach is also identified as ‘critical discourse analysis’ that is popularised by the works of Fairclough (1985), van Dijk (1993) and Wodak (1994) (ibid.). Bhatia (2004) has also mentioned that to be critical in genre analysis, one has to “account for broad social actions in creating and sustaining social identities, social structures and the functioning of social institutions through discursive practices” (p. 156).

Gradual development across these three phases of discourse analysis eventually leads to the movement of genre analysis from a textual space to the social space through socio-cognitive space that comprises the tactical space and professional space (Bhatia, 2004, p. 18-19). As textual knowledge become professional and social knowledge, the

focus of genre analysis has shifted from a surface level thin analysis to an in-depth and thick descriptive analysis. Beyond lexico-grammatical forms and textual patterns, genres are also analysed by its cognitive or rationale structures and genres as ‘social action’ (Miller, 1984) through a multidisciplinary, multidimensional and multi-perspective model of discourse.

2.2.2 About this research

This research focuses on the socio-cognitive space that views the discourse of natural history from two major perspectives: discourse as genre and discourse as professional practice. Before we delve further on these perspectives, I will review some extensive works and past literature on genre knowledge.

2.3 WHAT IS GENRE?

In contemporary living, we often encounter the word ‘genre’, as a result of the generification process which has expanded its scope of meaning from its original uses to common uses in different aspects of life when “categorizing films, popular music, TV programs, books, magazines, promotional activities, and many other products from other slices of life” (Swales, 2004, p. 6). As Swales (1990) describes it, genre is a term that is “highly attractive ... but extremely slippery”, and sometimes “remains a fuzzy concept” (p. 33).

In folklore studies, genre is considered to be a “classificatory category, for example, a story may be classified as myth, legend or tale” (Swales, 1990, p. 34). Others may view genre as ‘forms’. However, narrative genres of such may not necessarily be classified by their forms, but are identified by their receiving community’s perceptions. Meanwhile in literary criticism studies, the fuzziness of genre is commonly disputed in the field. For example, Todorov (1976, as cited in Swales, 1990, p. 36) argues that new genres are transformations of older genres, as a base “by

inversion, by displacement, [and] by transformation” whilst Fowler’s (1982) works pointed out that genres are not mere “assemblies of more-or-less similar textual objects but ... are coded keyed events set within social communicative processes” (as cited in Swales, 1990, p. 38). Rhetoricians on the other hand, are concerned with the classification of discourse in terms of genre, being the “recurrence of similar forms in genre creation” (ibid., p.43). Miller (1984), in her seminal paper, stressed the importance of social and historical aspects in genre study that considers ‘genre as social action’, whereby it acquires its “meaning from situation and from the social context” as well as “mediating private intentions, [motives] and social exigence” (p. 163). These classical works on genre have spurred numerous studies and research in the linguistics domain.

Genre, in linguistics, carries a pervasive degree of meanings from a simple ‘type’ as an original French word (Swales & Feak, 2000, p. 7), then systemic or ‘Hallidayean’ approach in relating genre with the concept of ‘registers’ consisting of analytical variables of ‘field’, ‘tenor’ and ‘mode’ (Halliday, 1978, as cited in Swales, 1990, p. 40), to a discoursal view of genre in realising communicative goals of particular society in specific contexts and situations. The abundance of genre definitions from a corpus of linguistics literature can be summarized as below:

1. A “recognisable *communicative event* characterised by a set of *communicative purpose(s)* identified and mutually understood by *members* of the ... community in which it *regularly occurs*” (Swales, 1981, 1985, as cited in Bhatia, 1993, p. 13; Swales, 1990, p. 45-46). *Language* plays a crucial and significant role in such an event.
2. It is “highly *structured* and *conventionalised* [construct] with *constraints* on allowable contributions in terms of their intent, positioning, form and functional

value” (Swales, 1981, 1985, as cited in Bhatia, 1993, p. 13; Swales, 1990, p. 52-53).

3. A *typified* (cf. Miller, 1984, p. 156-157) *form* and textualised patterns of discourse with *similarities* in “structure, style, *content*, intended audience [and strategies]” to respond to recurring rhetorical situations (Miller, 1984, p. 151; Yates & Orlikowski, 1992, as cited in Vergaro, 2004; Berkenkotter & Huckin, 1995, p. 7; Swales, 1990; Paltridge, 2000, p. 398-399; Bhatia, 2002a, p. 7).

In other words, genre is a *product* resulting from “the activities and situations in which it is produced” (Berkenkotter & Huckin, 1995, p. 11).

4. Not just forms, but is also “*forms of life, ways of being ... [and] ‘frames’* (cf. Minsky, 1975, as cited in Dessen-Hammouda, 2008, p. 235) of *social actions*” that shapes our thoughts, communication and interaction (Bazerman, 1997, as cited in Dessen-Hammouda, 2008, p. 236; Miller, 1984, p. 165).
5. Has a *dynamic* character (‘rhetorical forms’ or structures) as it *changes or evolves* over time and is constantly developing (Berkenkotter & Huckin, 1995, p. 3-4; Swales, 1990; Paltridge, 2000, p. 397; Azirah & Norizah, 2011, p. 143).
6. From a social perspective, genre *construct social reality* by constituting and reproducing social structures through enacted responses to social needs that embed and “reveal norms and ideologies of discourse communities” (Berkenkotter & Huckin, 1995, p. 4; Paltridge, 2000, p. 399; Vergaro, 2004, p. 183).

It is being identified as ‘*generic artefacts*’ (Bhatia, 2002a, p. 7, 2004, p. 112-152) and also considered as ‘*cultural artefacts*’ (Miller, 1994) that models

discourse used by members of the society to achieve social functions (Vergaro, 2004, p. 188).

7. From a cognitive perspective, it is a form of '*situated cognition*' (Brown, Collins & Duguid, 1989, as cited in Berkenkotter & Huckin, 1995, p. 7) whereby "*prototypicality* of the exemplars or instances of genres" (Paltridge, 1995, p. 394; Swales, 1990, p. 49) continues to give itself relevant meanings as it develops in the activities of particular culture or society. Such meanings are derived from the cognitive structures beyond signs and symbolic representations within language (Forbes, 1992, as cited in Paltridge, 1995, p. 395).
8. From a pragmatic perspective, Paltridge (1995) indicates that a *genre assignment* (especially for a text without stereotypical properties) can happen on the basis of *pragmatic and perceptual conditions* based on cognitive concepts of 'prototype' and 'inheritance', critical theory of 'intertextuality' and pragmatic notions of 'sufficient similarity' and 'felicity conditions' (cf. Austin, 1962, as cited in *ibid.*, p. 396).
9. Genres are always '*sites of contestation*' (Berkenkotter & Huckin, 1995, p. 5; Bhatia, 2002a, p. 7) and often unstable (Candlin & Plum, 1999 and Sarangi & Roberts, 1999, as cited in Bhatia, 2004, p. 29) because the *intellectual scaffolding* of community-based knowledge embraces the concepts of 'surprise value' or 'novelty' (Berkenkotter & Huckin, 1995, p. 15). It reflects a real world of discourse that is complex, dynamic, constantly developing and unpredictable in the form of hybrid, mixed and embedded genres (Bhatia, 2002a, p. 7, 2004, p. 25).

10. It can be *exploited* by expert or powerful members of the discourse community to convey hidden *private intentions* or motives and social '*exigence*' (cf. Miller, 1984, p.158) (Bhatia, 1993, p. 15, 2002a, p. 7, 2004, p. 87-111; Miller, 1984, p. 163).

In some studies, genres include 'symbolic' and 'materialized' genres (Dressen-Hammoda, 2008, p. 236; Morton, 2009, p. 218) that represent cognitive frames of shared understanding or knowing and visible products for ESP or English for Academic Purposes (EAP) respectively. Other genres that are common in the research world consist of 'open genres' that are made public and published such as thesis, book chapters, research articles, conference papers and monographs, and 'supporting genres'; those that "support or assist academic or research career" such as curriculum vitae, biography notes, research paper reviews, etc. (Swales & Feak, 2000, p. 8).

Within the field of genres, understanding of 'genre knowledge' (containing both procedural and social knowledge), 'genre variations', 'genre relations' and the discursive practices of genre are essential to 'genre production' and 'genre acquisition' leading to 'genre competence' and eventually, 'genre mastery' in specialist discourse (Bakhtin, 1986, p.80, as cited in Morton, 2009, p.224; Berkenkotter & Huckin, 1995, p. 13; Connor & Mauranen, 1999, as cited in Samraj, 2005; Paltridge, 2000, p. 400; Dressen-Hammoda, 2008, p. 233). Genre experts usually exploit these concepts to demonstrate their expertise with respect to their community of practice for professional success, while genre analysts investigate similar concepts to make them explicit for understanding of genres in the discourse community.

2.3.1 Genres and relationships with registers and disciplines

Bhatia (2004) has distinguished genres clearly through his explanation of the "interrelationship between genres, registers and disciplines (p. 31). According to him,

disciplines constitute the broad “predominantly characteristics of the subject matter” (ibid., p. 30) and usually represent the content that are found within a particular field of knowledge. It can also refer to intellectual contents of “more established fields of inquiry” (Samraj, 2005, p. 144) such as the discipline of business, law and science. A discipline is primarily understood by its norms, epistemologies, values, ways of thinking and methodologies, to name a few.

Registers, apart from being seen as typical configurations of field, tenor and mode (Hasan, 1973, as cited in Bhatia, 2004, p. 31), also represent the language used or associated with a particular content. Referring to the disciplinary examples given earlier, the corresponding registers for each discipline are business, legal and scientific. Most of the time, they are identified in terms of specialist lexis and specific grammatical or syntactic features, therefore, have a narrower scope by its definition.

Bhatia (2004) mentioned that “genres cut across disciplines” (p. 30-32). While genres are sensitive to disciplinary variations and traditionally considered as registers, they display “subtle variations in terms of specific disciplinary concerns ... [and shares] common concern [by] making disciplinary knowledge accessible to learners new to the disciplines”. However, genres do differ in terms of the ways they approach disciplinary knowledge (discursive practices), have different socio-cognitive realities and typical cognitive structures or patterning in achieving specific communication purposes (ibid., p. 32). Examples of genres include textbooks, research articles and academic essays.

The general picture of the relationships between registers, disciplines and genres is shown in Figure 2.1 and the idea that genres cuts across disciplines and registers is much more complex than what is illustrated in the diagram.

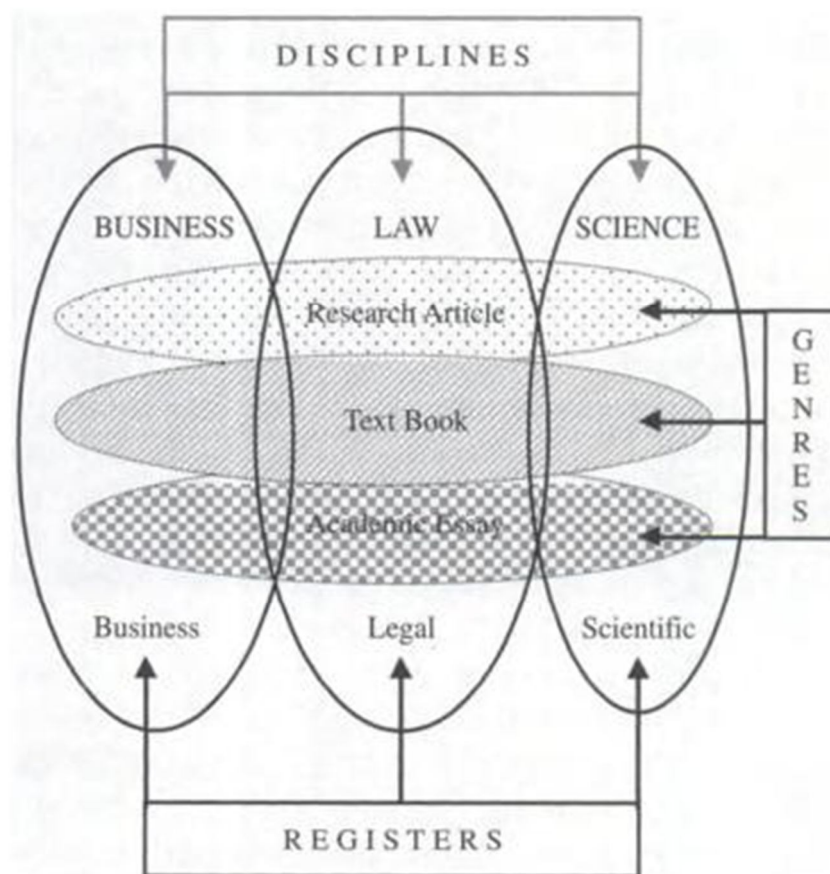


Figure 2.1: Interrelationships between genres, registers and disciplines in academic discourse (adapted from Bhatia, 2004, p. 31).

2.3.2 Classification of genres

There are many ways to look at genres within and across disciplinary domains by using interesting concepts to identify and describe genres. The notions of ‘*genre set*’, ‘*genre chain*’, ‘*genre networks*’, ‘*systems of genres*’ and ‘*disciplinary genres*’ are used to classify ‘*domain-specific genres*’ that represent genres found either in the academic or professional settings. As genres cut across disciplinary and professional boundaries or domains, instances of ‘*genre colonies*’ or ‘*super genres*’ and hierarchies of ‘*sub-genres*’ are used to describe “a constellation of individually recognized genres ... as a natural consequence of the versatility of genres” (Bhatia, 2004, p. 57) to allow systematic description and identification of genres at various level of generalisations. Conceptual categorisation of genres reveals the relationships between genres and relationships of genres to the features of context.

2.3.2.1 *Genre sets*

‘Genre sets’ was first proposed by Devitt (1991) that refers to the “range of text-genres [or spoken genres] that a particular professional group produces in the course of their daily routine” (Bhatia, 2004, p. 53). This set comprises distinct individual genres which are intertextually linked and texts in it have typical patterns with other texts that are produced by professionals in the same field. By intertextuality, this means that texts derive meanings from the contexts of other texts and through the interactions between texts (Devitt, 1991, p. 336). She discusses this concept in the case of tax accountants where they produce all kinds of texts within a ‘*genre set*’ as part of their duties, for example, opinion letters to clients, response letters to clients, letters to taxing authorities, administrative memoranda, reviews of tax provisions, etc. (ibid., p. 339; Bazerman, 1994, p. 98; Bhatia, 2004, p. 53).

However, this concept narrowly refers to the limited set of generic texts that represents “participation of only one side of the professional output [or practice in a multiple person interaction]” (Bazerman, 1994, p. 98; Bhatia, 2004, p. 53). Nevertheless, Tardy (2003) agreed with Devitt (2000) that it is impossible to understand a single genre without “understanding the genre set in which it operates, including both the genres that are used explicitly and those that are only referred to implicitly” (p. 11). Besides, *genre set* also represents “a system of actions and interactions [with] specific social locations, functions [and] repeated or recurrent value” (Miller, 1994, p. 70) that binds distinct genres together.

2.3.2.2 *Genre chain*

This concept illustrates the relationships between genres in a chronological structure where the ordering of specific genres require “antecedent for [or precedent of] another” (Swales, 2004, p. 18) to yield all necessary links in between them. Succession of genres

is conceived as ‘chains’ (ibid.) and they specify the interactions of genres with other genres in a network system i.e. how different genres are used and related to one another (Paltridge, 2006, p. 89; Cheng & Kong, 2009, p. 12).

Swales, in 1996 (as cited in Swales, 2004, p. 18) mentioned that a *genre chain* may contain two kinds of genre categories: the first one is a ‘*formal or official genre*’ such as a colloquium presentation and the second one, are the ‘*occluded genres*’ which are “out of sight” to outsiders and apprentices such as hand-outs, Powerpoint slides and presentation drafts. Occluded genres play essential roles in the administration and functioning of genre chain in its network system.

Raisanen (1999, p. 112, as cited in Swales, 2004, p. 19) has illustrated the *genre chain* in the research world with the following example shown below:

Call for abstracts → Abstract → Review process → Instructions → Draft for conference proceedings → Review process → Revised draft → Review process → Published proceedings → Oral presentation

The existence of *genre chain* encourages forward planning and the necessary structuring functions to activate all the necessary links in the chain to achieve anticipated output/genres at the end of the sequence. Similarly, Patridge (2006) defines a *genre chain* of a job application in order to understand the construction process of a job application letter by “understanding what comes before and after it” (as cited in Cheng & Kong, 2009, p. 12):

Job advertisement → Position description → Letter of application → Resume → Job interview → Offer of appointment → Negotiation of offer

(Patridge, 2006, p. 90)

Genre chains of the above explain the typical sequence, ordering, sometimes ranking (values of genres in particular settings) and hierarchy of genres that are found in a genre network system.

2.3.2.3 *Genre networks*

A network of genres can be seen as “the totality of genres available for a particular sector” (Swales, 2004, p. 22) at a given point of time. *Genre networks* can also be viewed as a platform that provides the context for interconnected genres to exist. It is a place where chronological or logical sequences, hierarchies, connections, generic inter-textual genres, formal (official) and occluded (behind the scenes) genres, open (easily visible) and supporting genres, *inter alia* are found in a particular setting (Bakhtin, 1986, p. 91, as cited in Swales, 2004, p. 21; Swales, 1996, as cited in Swales, 2004, p. 18; Swales & Feak, 2000, p. 8; Cheng & Kong, 2009, p. 12). For example, Swales & Feak (2000) have looked at *genre networks* for graduate students which consist of a variety of open genres and supporting genres (p. 8; also in Patridge, 2006, p. 94).

2.3.2.4 *Systems of genres*

Very similar and closely related to *genre networks*, the concept of *systems of genres* encompass a system of “interrelated genres that interact with each other in specific settings” (Bazerman, 1994, p. 97) and “the full set of genres that instantiate the participation of all the parties” (ibid., 99) involved. Overlapping propositions between the concepts of *genre networks* and *systems of genres* may not be easily distinguished, but each notion on its own has been quoted by different scholars in the field at different period of time in history; the latter being more prominent in literature and research related to genre studies.

Compared with *genre sets*, this notion is more comprehensive because it represents the practices of the members of a particular discourse community, thereby

incorporating the complete set of discursive forms, full interactions, full events, all sets of social relations and subsuming genres that are invoked by all the participants involved in a professional activity (Bazerman, 1994, p. 99; Bhatia, 2002a, p. 9; 2004, p. 55). By extending Devitt's case (1991) of *genre sets* for tax accountants, the *systems of genres* will then include the "full file letters from and to the client, from and to the government [and] from and to the accountant", *inter alia* (Bazerman, 1994, p. 99).

Bhatia (2002a) has given other examples of *systems of genres* in his research article:

Systems of genres in:

- Law – cases, judgements, ordinances, contracts, agreements, etc.
- Business – memos, reports, case studies, letters, etc.
- Public administration – government documents, news reports, policies, treaties, etc.
- Mass media – editorials, news reports, review articles, advertisements, etc.

(Bhatia, 2002a, p. 10)

2.3.2.5 *Disciplinary genres*

By being an extension to *systems of genres*, this notion "include all the discursive forms that are invoked in all professional practices associated with a particular disciplinary or professional domain" (Bhatia, 2004, p. 55). In other words, discipline-specific or profession-specific genres that shares similar knowledge structures, norms, vocabularies and discourses, assumptions and beliefs, rhetorical standards, and modes of expressions, are considered as *disciplinary genres* by their nature.

2.3.2.6 *Domain-specific genres*

The categories of genre sets, system of genres and disciplinary genres form domain-specific genres. Each of these incorporates "a limited set of genres representing an

increasing range and level of discursive practices” (Bhatia, 2004, p. 55). These systems are usually configured discursively by their discourse community to operate at different levels of generalisation within specific disciplinary, academic or professional domains.

2.3.2.7 *Genre colonies: Genres across domains*

Colonies of genres are ‘*super genres*’ that incorporate “a constellation of individually recognized genres that display strong similarities across disciplinary and professional boundaries” (Bhatia, 2004, p. 57). ‘*Super genres*’ contain ‘*sub-genres*’ on a level below it and genre members of these colonies may not necessarily respect or adhere to their disciplinary or domain boundaries. The term ‘*genre colony*’ was originally coined by Bhatia in 1999, which refers to those genres that are distinct from one another but they shared enough similar traits to perform the same social practice or communicative functions in the discourse community (as cited in Caballero, 2008, p. 18). This concept posits several important implications for genre theory and research:

1. It brings about a certain degree of versatility in the process of genre identification and description. Genres can be analysed at different levels of generalisation in terms of *super genres*, *genres* and *sub-genres*, and these categories can be related to specific features of the context for explanation of relevant genre constructs (Bhatia, 2004, p. 57; Bhatia, 2008b, p. 34-35).
2. *Genre colony* represent a grouping of closely related genres within and across disciplinary and professional domains, that share and serve similar communicative purposes, at least partially, if not exclusively. These genres may, on their own be different in various circumstances such as their intended audience, disciplinary or professional affiliations and constraints, contexts of use, etc. They can be referred to as the “primary members of the colony”, or identified as *macro-genres* (Bhatia, 2004, p. 57-58; Bhatia, 2008b, p. 34).

3. *Genre colony* “incorporates the process of colonization ... [and] involves invasion of the integrity of one genre by another genre or genre convention” (Bhatia, 2004, p. 58), which leads to hybridisation of genres. Eventually, the hybrid form will share genre characteristics with the one that invaded its integrity.
4. Members of a *genre colony* sometimes “exploit and appropriate generic resources ... [to create] variant forms of membership” (Bhatia, 2008b, p. 34) within or beyond their existing boundaries to create hybrid (both mixed and embedded) forms.
5. Hybrid genres, due to the process of colonization, exploitation or appropriation of generic integrity are referred to as the “secondary members of the colony” (Bhatia, 2004, p. 58).
6. The demarcation of disciplinary or professional boundaries within *genre colonies* is often fuzzy and most difficult to draw as it is always fluid by nature due to “the complex and dynamic variation and constant development of generic norms within and across disciplinary and professional cultures” (Bhatia, 2004, p. 58). This view supports what Bakhtin (1986) says about genres being “changeable, flexible and plastic” (p. 80, as cited in Berkenkotter & Huckin, 1995, p. 2).

Bhatia (2004) gives a full description of three types of *super genres* namely the colonies of ‘promotional genres’, ‘academic introductions’ and ‘reporting genres’ (p. 59). Recently, he introduced a new genre colony called ‘letter genres’ (Bhatia, 2008b, p. 34-37) based on the versatility feature in the use of letters within and across disciplinary,

institutional, professional and social domains. Other genre colonies may include academic genres, textbook genres, email genres, etc. (Bhatia, 2002a, p. 10).

Promotional genres

This genre colony consists of a constellation of closely related genres that have a common or overlapping communicative purpose, which is to promote products or services to potential customers (Bhatia, 2004, p. 60). Promotional genres can be described at various levels of generalisation and genres at each level may display subtle differences in their realisations. Classification of genre levels depends on specific criteria such as the settings where genres are used, the medium in which genres are delivered, types of products that genres represent, the target recipients of relevant genres, and so on.

At the textual level, communicative purposes shared by all genres within their colony are realised by a combination of rhetorical acts which Bhatia (2002a) calls ‘generic values’ (as cited in Bhatia, 2004, p. 60). This concept is similar to ‘basic forms’ (Werlich, 1982, as cited in *ibid.*), ‘primary speech genres’ (Bakhtin, 1986, as cited in *ibid.*) and ‘micro-genres’ (Martin, 1997, as cited in Paltridge & Phakiti, 2010, p. 261). Generic values can also mean “a section of a text (or whole text) which represents a type of text” (Paltridge & Phakiti, 2010, p. 264) and they are often combined to shape genre colonies (Bhatia, 2004, p. 60). For example, generic values include narratives, arguments, descriptions, explanations, instructions, expositions, discussions, reports, recounts, procedures and problem-solutions. Promotional genres, in this sense, are identified and described by a combination of descriptive and evaluative generic values.

Versatility in genre description of promotional genres is illustrated in Figure 2.2

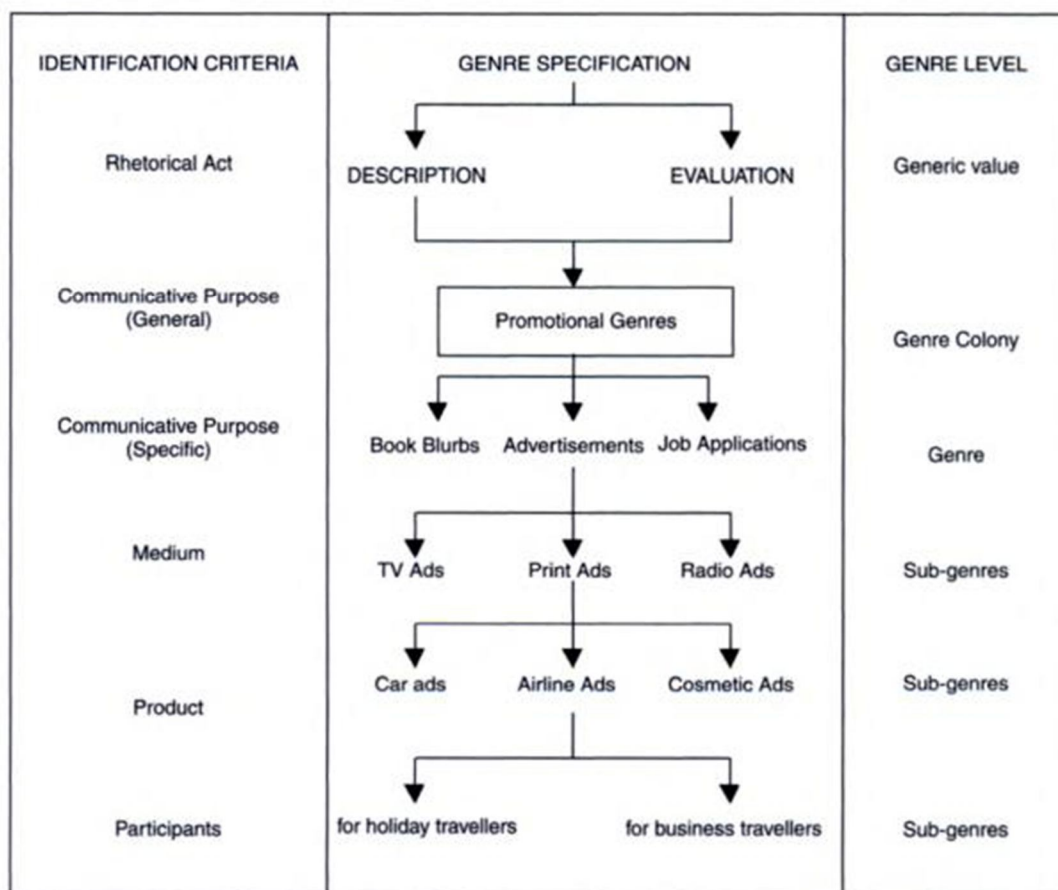


Figure 2.2: Generic description of promotional genres (adapted from Bhatia, 2004, p. 59).

In Figure 2.2, we can see how genres are related to one another to form a colony of promotional genres that shares similar communicative purposes to a certain extent. At a level of generalisation below the promotional discourse, we have common examples of promotional genres such as book blurbs, advertisements and job application letters. These genres serve different markets and audiences, differ in the products they promote and may also employ different strategies and lexico-grammatical resources to achieve their purposes. Nevertheless, all of these display a certain degree of overlaps by their promotional nature, and perhaps similar in terms of their linguistic and discoursal features which are used to realise general communicative purposes (Bhatia, 2004, p. 59).

If we look closely at one particular genre, say, advertisements, it can be viewed further at a lower level of generalisation through specific distinction or realisation in

terms of the medium of discourse. By doing so, we can identify different advertisements (as separate genres) that are delivered through television, in print and radio broadcast channels. As we delve further by just focusing on print advertisements, sub-genres such as car ads, airline ads and cosmetic ads can be identified according to the product that each genre promotes. Similarly, if we sub-categorize genres based on the participants that consume them, sub-genres such as airline ads for holiday makers and business travellers can be identified. In general, variations among genres at different levels of generalisation allow distinctive genres to grow within the colony as long as they share and demonstrate certain promotional features (Bhatia, 2004, p. 60-61).

So far, only primary members of promotional genres are covered in Figure 2.2. Going beyond these genres in the colony, other genres with similar promotional intent and concern may consist of “fundraising letters, travel brochures, grant proposals ... book reviews, film reviews, company reports, advertorials, company brochures” (Bhatia, 2004, p. 61) that may promote intangible products such as services and ideas to intended participants (see Figure 2.3). These examples are considered as the secondary members in promotional genres. The membership of the colony may change over time when new genres are added or existing genres change, develop or become obsolete due to lack of use. Hence, the distinction between primary and secondary members depends on “the degree and nature of appropriation of promotional elements” (ibid.). Although some genres are secondary in the colony of promotional genres, they could be legitimate primary members in another genre colony. These cases are usually associated with hybrid genres that have partial memberships in multiple colonies.

In Figure 2.3, the primary members in the colony of promotional genres consist of job application letters, advertisements, book blurbs, sales promotion letters, job advertisements and reference letters. Meanwhile, secondary members include all other genres such as fundraising letters, travel brochures, film reviews, public campaigns,

grant proposals and mixed genres (partly promotional and partly informational) i.e. book reviews, company reports, annual reports, company brochures and advertorials. Although these genres are distinctive in many ways, they represent sub-genres of multiple different levels of generalisations within the colony and they are grouped together because of their close proximity in terms of genre relationships and shared communicative purposes.

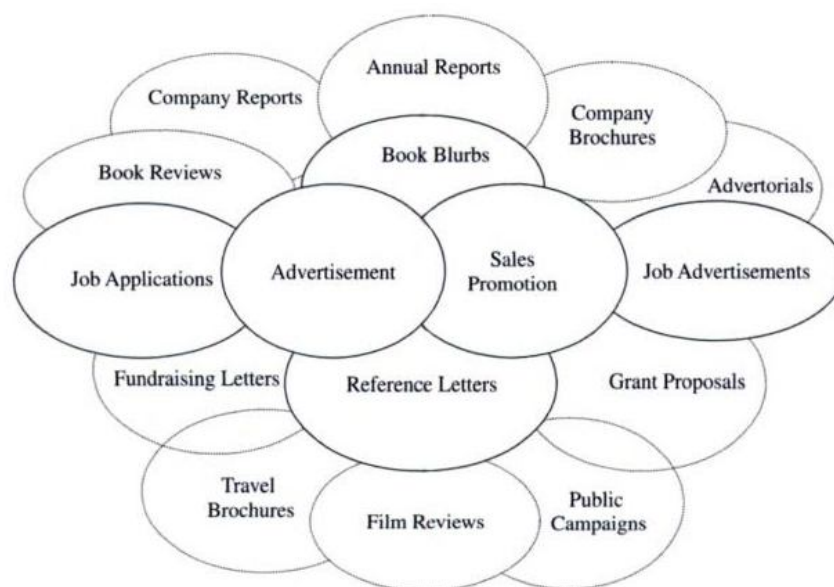


Figure 2.3: Primary and secondary members in the colony of promotional genres (adapted from Bhatia, 2004, p. 62).

Academic introductions

The introduction is a versatile and common concept that we use to introduce ourselves, a new friend, a book, lecture topic, new findings in research articles and so on. A genre colony comprising of closely related genres that realises the actions of this concept is called ‘introductory genres’. Generic values that are associated with introductory genres are mainly descriptions, narrations and evaluations. In the academic context, ‘academic introductions’ has a broad communicative purpose of “introducing an academic work” (Bhatia, 2004, p. 66) that are represented by various genres of introductions such as an essay introduction, a book introduction or an article introduction (see Figure 2.4).

As we look further within a book introduction genre, we can see it realises more specific genres such as ‘introduction to book’, ‘introductory chapter’ and ‘book blurb’. A typical ‘introduction to book’ is not part of the book content and serves to introduce an overview of a book about its purpose, audience, scope and positive aspects of the work. Contrary to this, the ‘introductory chapter’ belongs to a book content, gives detailed explanations on topics covered and contexts necessary for the book to be understood. As for ‘book blurb’, it is usually placed at the back matter of a book that provides a quick summary about it accompanied by positive reviews by scholars who are experts in the field to which the book belongs.

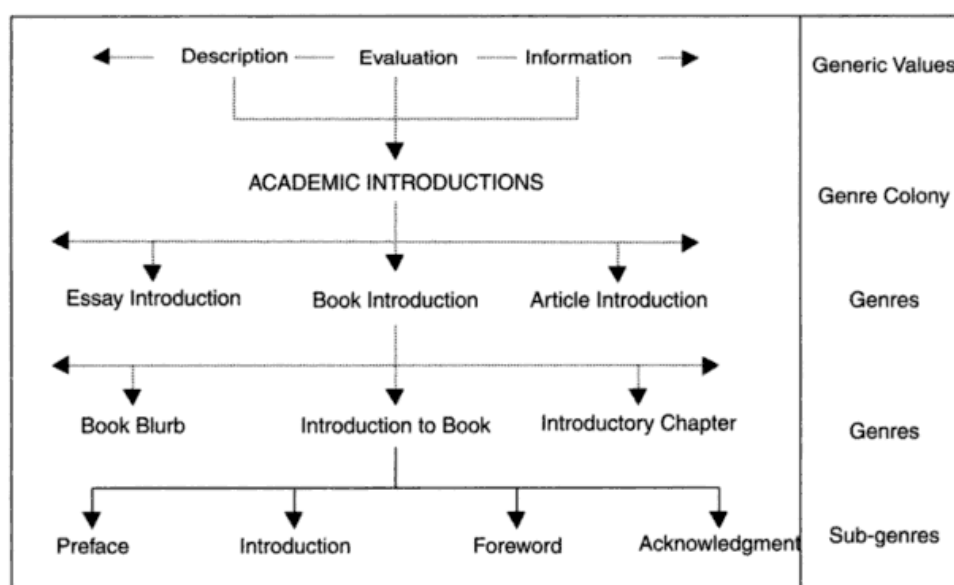


Figure 2.4: Description of academic introductions colony (adapted from Bhatia, 2004, p. 67).

To explain further the introductory part of an academic book, various sub-genres such as ‘preface’, ‘introduction’, ‘foreword’ and ‘acknowledgment’ can be found at a lower level of generalisation. These genres are meant to introduce the book and they have subtle differences in that they serve specific purposes (see Table 2.1).

Sub-genre	Main function	Communicative purpose
Preface	Outlines the general purpose and scope of the book	Informational and promotional
Introduction	Places the content in the context of the field and advise reader how to traverse or use the book	Informational

Foreword	A book comment of the book that is usually written by someone else or a well-known scholar	Promotional
Acknowledgment	Expresses gratitude and thanks to people who the author have engaged for help in preparing the book	Public relational and promotional

Table 2.1: Subtle differences between sub-genres of academic introductions.

However, there is a considerable amount of overlaps and mixing that exists between them especially in the case of preface, book introduction and foreword where they “are often found to contain expressions of gratitude that would normally be expected in the acknowledgments section” (Bhatia, 1997, as cited in Giannoni, 2006, p. 22). Hence, the traditional differences between these sub-genres according to conventional wisdom have become blurred today.

Reporting genres

Reporting genres is another genre colony that is similar to previous colonies. It is perhaps one of the most popular ones that are commonly used in all contexts of professional and academic discourses across disciplines and domains. Generic values that define reporting genres consist of narrations, descriptions and usually argumentations. In today’s modern world, we are used to news reports, business reports, medical reports, scientist reports, law reports and technical reports which are grounded closely within their disciplinary fields and domains. These genres share a common reporting-type genre that reports on various events, situations, findings, results, performance, and so on. They are usually objective and factual except for the case of news reports that may be presented in different perspectives. The colony of reporting genres is represented in Figure 2.5.

We can further display distinctiveness in genres of this colony by their subtle differences in terms of specialist lexis and rhetorical variations. News report, for example, has various types such as “hard news, news on special topics such as science, business and economics ...” (Bhatia, 1993, p. 157-74), trivia news or news on sports,

but they differ in terms of intended readers, main ideas, time of event, etc. Similarly, business reports in professional settings consist of different kinds of reports such as annual reports, performance reports, feasibility reports, financial reports, sales reports, audit reports and progress or status reports (see Figure 2.6); each has subtle differences amongst themselves. Represented within the colony, individual genres may belong to a specific disciplinary domain and/or overlap across other disciplinary boundaries, yet they display and serve the same general function of “reporting on activities, events, state of affairs and socio-political developments in diverse areas and disciplines” (Bhatia, 1999, p.130, as cited in Garrido, 2004, p.128).



Figure 2.5: Colony of reporting genres across disciplinary boundaries (adapted from Bhatia, 2004, p. 83).

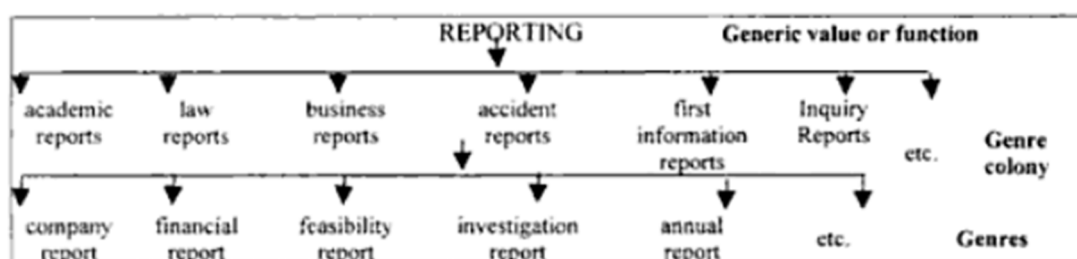


Figure 2.6: Reporting genres (adapted from Bhatia, 2001, p. 83, as cited in Garrido, 2004, p. 128).

Letter genres

‘Letter genres’ is considered a genre colony as well because it incorporates a wide variety of letters that display versatility at different levels in genre identification and description. Categories of letters are defined by specific criteria based on disciplinary, institutional, academic or professional variations. Bhatia (2008b, p. 35) has outlined several types of letters with such categorization in Table 2.2.

Criteria of letters	Genre and sub-genre
Professional domains	Business letters, technical letters
Functionality	Sales promotion letters, love letters, letters of appeal, fundraising letters
Modality	Public letters vs. private letters
Levels of formality	Formal, informal and intimate letters
Medium	Spoken form, traditional written letters, electronic mail or e-mail vs. snail mail
Number of addressees	Individual letters, copies and circulars addressed to a group

Table 2.2: Types of letters by specific criteria (adapted from Bhatia, 2008b, p. 35).

Generic values that ‘letter genres’ possess are numerous: narrations, explanations, argumentations, descriptions, problem-solution, expositions, etc. These are used in various kinds of letters and they depend on the choice of formal vs. informal styles and the degree of professional vs. personal functions of a particular genre. The level of disciplinary specificity also plays a crucial role in categorizing genres and sub-genres in the colony of letter genres. Differences and overlaps in letter genres between these aspects are illustrated in Figure 2.7.

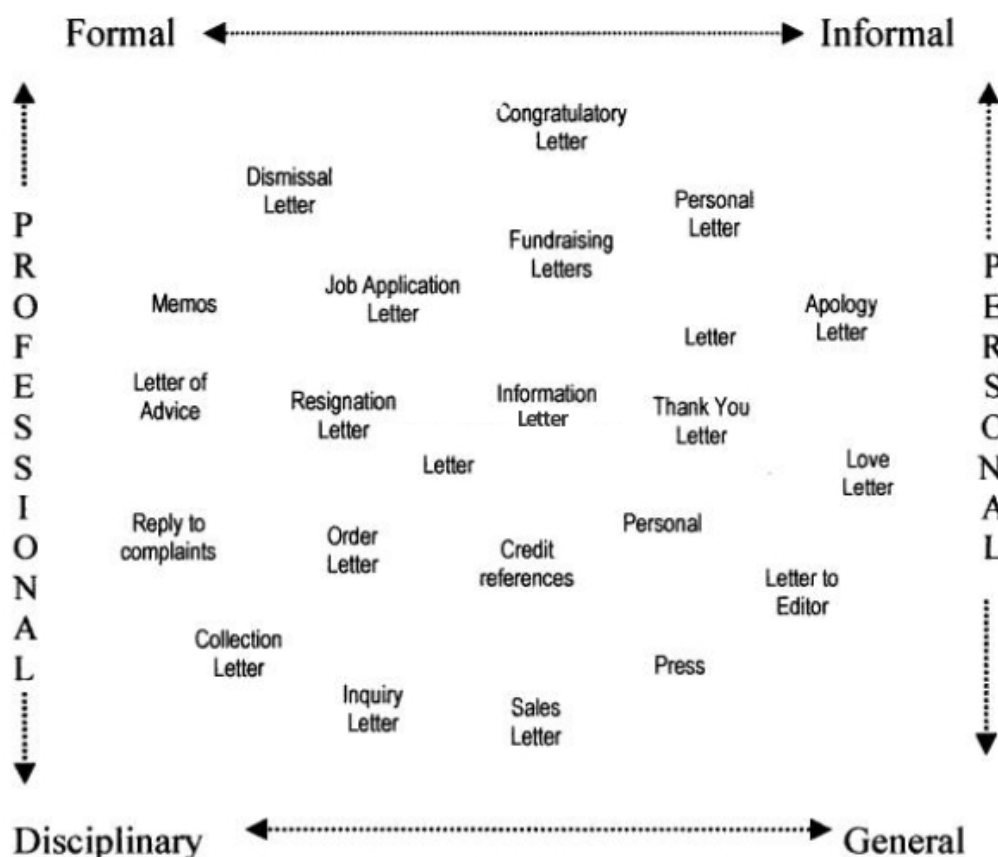


Figure 2.7: Letter genre colony (adapted from Bhatia, 2008b, p. 36).

2.3.2.8 Hybrid genres

Hybrid genres are produced by combined genres of different types to serve socially recognized communicative purposes in the discourse community. In other words, they serve multiple communicative purposes through the combined generic form (Bhatia, 2002a, p. 11). They are usually represented in the form of *mixed genres* or *embedded genres*. Both genres are considered innovative and dynamic generic forms because generic conventions and resources in terms of lexico-grammatical, rhetorical and discoursal features are appropriated “from a specific genre for the construction of another” (Bhatia, 2004, p. 87) through a process known as *genre bending*.

Genre bending occurs when expert writers exploit and manipulate generic integrity of different types of genres to communicate specific ‘private intentions’ in shaping hybrid genres (both mixed and embedded forms). Sometimes this process creates tensions and conflicts in the resulting forms. In some instances, generic integrity

of a genre is invaded through “colonization of one genre by the other” (Bhatia, 2004, p. 87). The notion of *interdiscursivity* (as explained later) also refers to this process where various semiotic resources are appropriated to convey private intentions or motives of genre producers “within the context of socially accepted communicative purposes that a particular genre is meant to serve” (Bhatia, 1995, as cited in *ibid.*). In general, genre bending may produce hybrid forms that violate the “conformity of generic constructions” but most often, they demonstrate some degree of genre creativity and innovation (Bhatia, 2002a, p. 12).

Mixed genres are genres with communicative purposes that are “legitimately mixed ... without opting out of the socially established generic boundaries” (Bhatia, 2004, p. 81) of the combined genres; hence, they are creative and innovative derivations of ‘pure genres’ from which they are mixed from. Meanwhile, *embedded genres* are genres that are created from the discursive act of colonization whereby “a particular generic form ... [is] used as a template to give expression to another conventionally generic form” (*ibid.*, p. 78). In other words, a genre is embedded within another for specific reasons (usually for promotional concerns) to deliver intended communicative functions. Genre embedding may lead to genre conflicts and tensions of generic integrity.

Hybrid genres in both forms are common in professional discourses because of the “dynamic complexity of professional communication ... [due to] use of multimedia, explosion of information technology, multi-disciplinary contexts of the world or work ... and the overwhelmingly compulsive nature of promotional and advertising activities” (Bhatia, 1995, p. 1, as cited in Bhatia, 2004, p. 78). By using the colony of promotional genres as an example, mixed genres consist of book reviews, annual reports, advertorials, etc. while embedded genres consists of job and sales

advertisements that are written in the form of a poem, story or an article (see Bhatia, 2004, p. 79-80).

2.4 GENRE ANALYSIS

Traditionally, genre analysis has always been viewed as a study of situated linguistic behaviours in particular academic, institutional or professional settings. Contemporary research characterise genre analysis as a multidisciplinary activity and involve multi-faceted and varied perspectives on analysing genre and discourse (Bhatia, 2002a, p. 4, 2004, p. 18-19). At first, it serves to fulfil the rationale for ESP and ‘genre pedagogy’ where teaching of genre analysis is key in assisting students’ pragmatic developments and to increase their awareness of the implications of their writings through understandings of the social requirements of the genre itself and the internal cognitive or structural patterning (Scott, 2007, p. 22). Then, research in genre analysis that concentrates on structures and linguistic features shifted beyond ESP to examine the “conventions of thought and communication which define [professional activities] and how they are expressed or textualised [by linguistic features]” (Widdowson, 1998, p. 9, as cited in Vergaro, 2004, p. 203). Subsequently, analysis of disciplinary discourses (mostly in the academic domain) and discourse-based investigations of organisational, institutional and professional practices (in the professional domain) proliferated as a result of rapid research developments in genre analysis.

Some of the recent genre analysis studies that illustrate the preceding explanations are summarised in Table 2.3.

Academic genre	Professional genre
<ul style="list-style-type: none"> ▪ Discussion section of laboratory reports or dissertation (Parkinson, 2011) ▪ Medical research articles (Li & Ge, 2009) ▪ Student architecture presentations (Morton, 2009) ▪ Personal statement in graduate school application letters (Ding, 2007) ▪ Exegesis (thesis genre in the disciplines of Art and Design) (Paltridge, 2005) 	<ul style="list-style-type: none"> ▪ Legal Problem Question Answer (in academic writing) and Pareri (in professional writing) (Tessutto, 2011) ▪ Company audit reports (Flowerdew & Wan, 2010, 2006) ▪ Philanthropic fundraising and commercial advertising (Bhatia, 2010, 2004) ▪ Company annual report (Bhatia, 2008a, 2008c) ▪ Legislative writing (Bhatia, 2008c)

<ul style="list-style-type: none"> ▪ Research article abstracts and introductions in the disciplines of Conservation Biology and Wildlife Behaviour (Samraj, 2005) – Related studies: Swales, 1990; Anthony, 1999; Samraj, 2002. 	<ul style="list-style-type: none"> ▪ Job application cover letters (Scott, 2007) – Related studies: Bhatia, 1993; Henry & Roseberry, 2001. ▪ Direct mail letters (Upton, 2002, as cited in Scott, 2007) ▪ Tax computation letters (Flowerdew & Wan, 2006) ▪ Customer email replies (van Mulken & van der Meer, 2005) ▪ Sales promotion letters (Vergaro, 2004)
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Table 2.3: List of recent genre analysis research (2005-2011) reviewed.

From Table 2.3, we can briefly surmise that genre analysis has incorporated studies of disciplinary specialists or the professionals in the workplace while specific sub-genres within various academic disciplines have received more attention recently. These developments have encouraged both workplace practitioners to gain a better understanding of their professional and organisational practices from the perspective of language use, and ESP trainers/learners to practice applied genre analysis for pedagogy in specific sub-genres within and across academic disciplines.

According to Bhatia (2004), there are seven main goals of genre analysis which are:

1. to understand and account for the realities of the world of discourse.
2. to understand ‘private intentions’ within professional genres.
3. to understand individual, organisational, professional and social identities constructed through discursive practices within specific disciplinary cultures.
4. to understand how professional boundaries are negotiated through discourse practices.
5. to investigate language as action in socio-critical environments.
6. to offer effective pedagogical solutions.
7. to negotiate interactions between discourse practices and professional practices.

(Bhatia, 2004, p. 157-160)

In the past, two models of genre analysis have been proposed: Bhatia, 1993 and Paltridge, 1995. The first one provides seven steps or procedures listed below:

1. Placing the given genre-text in a situational context.
2. Surveying existing literature.
3. Refining the situational/contextual analysis.
4. Selecting the corpus.
5. Studying the institutional context.
6. Levels of linguistic analysis:
 - a. Level 1 – Analysis of lexico-grammatical patterns
 - b. Level 2 – Analysis of text-patterning or textualisation
 - c. Level 3 – Structural interpretation of the text-genre
7. Specialist information in genre analysis.

(Bhatia, 1993, p. 22-36)

The second framework for genre analysis gives a pragmatic perspective that lies in the concepts of prototype, intertextuality and inheritance (Paltridge, 1995, p. 394). In this model, genre is analysed according to four different aspects as listed below:

1. The centrality of the notion of prototype.
2. The relationship between genre, concepts and situations.
3. Components of the interactional frames:
 - a. Sender
 - b. Receiver
 - c. Message form
 - d. Code
 - e. Topic
 - f. Setting
 - g. Function
4. Components of cognitive/conceptual frames:
 - a. Scenario

- b. Roles
- c. Macrostructures
- d. Discourse elements and discourse relation/s
- e. Components of discourse elements
- f. Semantic relations
- g. Institutional understandings

(Paltridge, 1995, p. 397-398)

If we look closely at these two models of genre analysis, Bhatia's 1993 framework emphasises both the contextual and linguistic analysis while Paltridge's framework focus on the analysis of discursive practices and social-critical factors. All these concerns have been incorporated in a more comprehensive four-part multidimensional perspective framework for discourse (or genre) analysis (Bhatia, 2004. p. 163) which requires thorough explorations and investigations from various analytical perspectives or dimensions that include the textual perspective, ethnographic perspective, socio-cognitive perspective and socio-critical perspective. This multidimensional analytical model for genre analysis is explained later in another section.

2.4.1 Move analysis

Since 1981, Swales's seminal paper (as cited in Azirah & Norizah, 2011, p. 145) on analysing genres using move analysis has dominated research in the field of genre analysis with profound impact until the present day. A 'move' is considered as a semantic unit or structure of a genre that realises a particular communicative purpose. By identifying and labelling all the plausible moves, a model for genre analysis of the genre in question can be proposed (ibid.).

Swales created a very useful model for introductions of research articles in the academic domain, which he calls it, the Create a Research Space (CARS) Model that consists of the move-steps structure below:

Move 1: Establishing the field

Step 1 – Claiming centrality (and/or)

Step 2 – Making topic generalisation/s (and/or)

Step 3 – Reviewing items of previous research

Move 2: Establishing a niche

Step 1A – Counter-claiming (or)

Step 1B – Indicating a gap (or)

Step 1C – Questing-raising (or)

Step 1D – Continuing a tradition

Move 3: Occupying the niche

Step 1A – Outlining purposes (or)

Step 1B – Announcing present research

Step 2 – Announcing principal findings

Step 3 – Indicating research article structure

(Swales, 1990, p. 141)

Moves are “semantic and functional units of texts” that specify its communicative purposes and linguistic boundaries (Ding, 2007, p. 370). Connor and Mauranen (1999, as cited in *ibid.*, p. 374) explained that moves are identified based on “the rhetorical purpose of texts and the division of the text into meaningful units on the basis of linguistic cues, which includes discourse markers”. In other words, genre is made up of ‘moves’ and sub-moves or their constituent ‘steps’, from which linguistic and discourse features are evident in their structures and they perform specific communicative roles or functions in the discourse community.

According to Swales (1990), moves and steps can be obligatory or optional. Li & Ge (2009) pointed out that obligatory moves or steps ensure genre integrity through

the provisioning of limits, constraints and allowable patterns of communication that shapes genre identity. They also defined the optional moves or steps as “available choices authors or speakers may choose to use” (p. 94). A relatively similar idea about “typical moves, subsidiary moves and unexpected moves” is discussed in van Mulken & van der Meer’s paper (2005, p. 100).

Another popular move analysis study at the professional domain is Bhatia’s work (1993) on sales promotion letters and job application letters. He proposes a seven-move structure model to explain communicative purposes of promotional genres:

1. Establishing credentials
2. Introducing the offer
 - a. Offering the product or service
 - b. Essential detailing of the offer
 - c. Indicating value of the offer
3. Offering incentives
4. Enclosing documents
5. Soliciting response
6. Using pressure tactics
7. Ending politely

(Bhatia, 1993, p. 46-56)

Both Swales’s (1990) and Bhatia’s (1993) move analysis frameworks have subsequently spawned many other similar studies on both academic and professional genres (Azirah & Norizah, 2011, p. 150-151). Another unique approach of move analysis that focus on the notion of ‘chronotope’ or the use of moves according to their “use of time and space” is discussed in Scott’s paper (2007, p. 4). He claimed that each move in job application cover letters has “a unique, primary spatio-temporal perspective”; the spatial

dimension is represented by semantic fields and lexical choices and the temporal dimension is represented by relevant selective tenses (ibid., p. 22). Scott's work hinted that by examining how moves realise specific communicative purposes according to different time frames and places, one may inform expected temporal and spatial conventions allowable in the genre.

2.4.2 Bhatia's multi-perspective three/four space model of genre analysis

Discourses can be identified and realised in terms of three concepts of space in Bhatia's 2004 model shown in Figure 2.8.

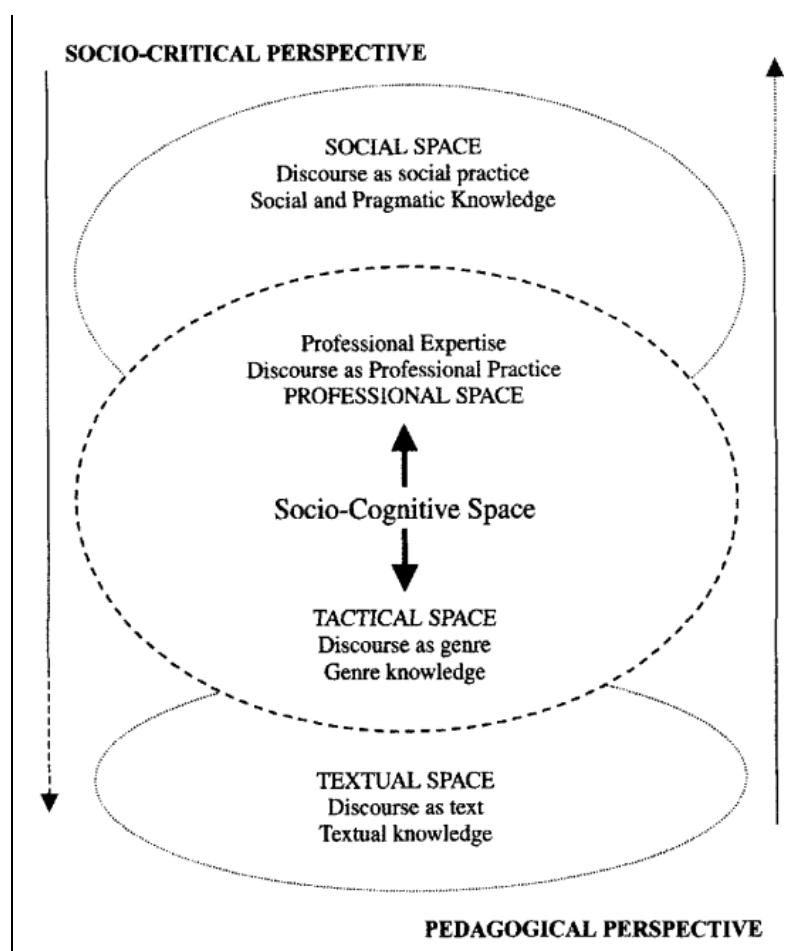


Figure 2.8: Three space model of genre analysis (adapted from Bhatia, 2004, p. 19).

These spaces are known as the *textual space*, the *socio-cognitive space* that consist of both *tactical space* and *professional space*, and the *social space*. These spaces represent the overlapping grounds where discourses operate within and across them from different

perspectives. Each space gives a perspective to discourse and addresses relevant typical questions that arise in it (see Table 2.4).

Bhatia's model also recommended the appropriate order which includes the direction and approaches for genre analysis based on major perspectives such as the pedagogic perspective and the socio-critical perspective (see Figure 2.8).

Space	Perspective on Discourse	Representation	Question Addressed
Textual space (<i>Textual knowledge</i>)	Textual perspective (<i>linguistic views</i>)	Discourse as text	<ul style="list-style-type: none"> What forms of language are realised in communication? What linguistic features are statistically and/or functionally distinctive?
Socio-cognitive space: Tactical space & Professional space (<i>Genre knowledge & professional expertise</i>)	Tactical & professional perspective (<i>socio-pragmatic & tactical views</i>)	Discourse as genre Discourse as professional practice	<ul style="list-style-type: none"> Why do members of professional discourse communities use the language the way they do in the conduct of their daily activities? What makes this possible?
Social space (<i>Social and pragmatic knowledge</i>)	Socio-critical perspective (<i>Socio-cultural and critical views</i>)	Discourse as social practice or action	<ul style="list-style-type: none"> How do social actions (which include language use) express social changes, social structures, identities and institutions? How are these variables determined by social institutions and processes? How is discourse constrained by social practices, identities and social structures?

Table 2.4: Perspectives on discourse (adapted from Bhatia, 2002a, p. 17; 2002b, p. 43; 2004, p. 19).

All interacting views and perspectives on discourse are not stand-alone by its own, but rather they are complementary to each other (Bhatia, 2004, p. 21). Traditionally, genre analysis is confined to the *textual space*, focusing only on the surface level of description concerned with the use and application of lexico-grammatical resources and intertextual elements (Bhatia, 2004, p. 18, 2008a, p.175).

Subsequently, genre analysis has placed more emphasis on the *tactical space* where context is given some attention and discourse and move structures have been taken into account to describe the organisational aspects of genres (Bhatia, 2008a, p.175).

More recently, it has shifted to include wider aspects of contextualisation and interdiscursivity at the *professional space*. Here, genre analysts attempt to establish links between discursive practices and professional practices of discourse communities as well as the disciplinary cultures that are displayed or reflected in both (Bhatia, 2008a, p. 176). In other words, accounts for “participant relationships, and their contributions to the process of genre construction, interpretation and use” (Bhatia, 2004, p. 156) are particularly important. Exploring interdiscursivity in this space also means investigating on how generic conventions and generic integrity of professional genres are being negotiated, exploited or appropriated to serve specific disciplinary goals, to respond to recurring or novel situational contexts or to realise hidden private intentions (Bhatia, 2004, p. 20, 2008a, p. 176).

At the macro level which focuses on the interaction of discourses with the broader social context in the *social space* (Bhatia, 2004, p. 20), “social actions” (Miller, 1984) (in the form of genres) are being investigated by focusing on the features of context. Here, genre analysts are interested in how “experts use their specialist knowledge to maintain and often assert their control over genres ... to achieve their professional objectives” (Bhatia, 2004, p. 156). Investigating social actions and their influences in social structures, identities, professional relationships, the functioning of institutions, and so on, through discursive practices, gives a critical “understanding of language use in the formation of social and institutional practices in a broader framework of language as social action” (ibid.).

2.4.3 Bhatia’s multidimensional framework for discourse analysis

Today, genre analysis of professional discourse is a “complex multi-perspective phenomenon” (Bhatia, 2008a, p. 163) and it is “increasingly becoming multidisciplinary and multidimensional” (Bhatia, 2002b, p. 40). To address such development, research in the field needs “an equally complex [and matching] methodological framework to

understand and analyse discourse ... comprehensively” (Bhatia, 2008d, p. 163). Hence, Bhatia’s three space model has been expanded to become an enriched multi-perspective multidimensional framework for the analysis of genres in the academic, professional, institutional and workplace domains. The framework envelopes four key dimensions of analysis spanning across all concepts of space by examining the *textual perspective*, *ethnographic perspective*, *socio-cognitive perspective* and *socio-critical perspective* of discourse (see Figure 2.9).

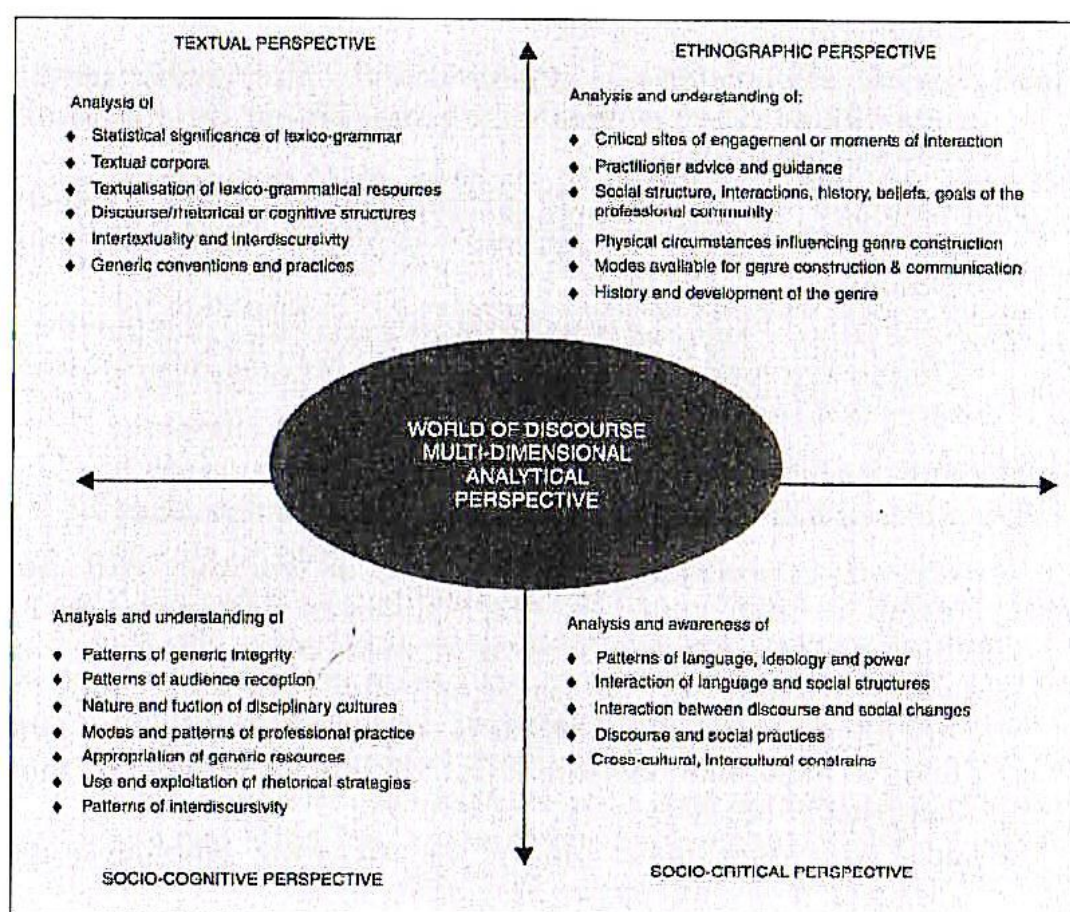


Figure 2.9: Bhatia’s multi-perspective multidimensional analytical framework for genre analysis (adapted from Bhatia, 2004, p. 163).

From the *textual perspective*, investigation focuses on the surface level of the text and includes “analyses of statistical significance of lexico-grammar based on a corpus of texts, textualisation of lexico-grammatical resources used in the corpus, patterns of discursal, rhetorical or cognitive structuring, and intertextuality as well as interdiscursivity ... within the context of generic conventions and practices” (Bhatia,

2004, p. 160-161). This quadrant alone is usually simple, inadequate and insufficient for a comprehensive representation of the complex realities of language use in the world of professions. However, textual analyses are popular in applied linguistic research for pedagogical and ESP purposes even though it may not necessarily prepare learners for the real world of work, and facilitate analyses of genre in the socio-cognitive space in terms of the cognitive or rhetorical move structures in genre conventions (ibid., p. 161).

Investigation based on *socio-cognitive perspective* requires understanding of the integrity of genres which are part of the discursive practices within specific disciplinary cultures. Analyses in this quadrant incorporate the inquiry of the construction, interpretation (by audience reception and insights) and use of genres in the discourse community. Interdiscursivity, appropriation of generic resources and use of rhetorical strategies to respond to recurring or novel situation are examined as well. Grounded investigations of professional practices in this segment also reveal the discursive patterns of the professional community; the patterns of composing genres, the patterns of reading and interpreting them, and the patterns of social roles of the participants (Bhatia, 2004, p. 161-162).

An inclusion of the *ethnographic perspective* greatly enhances the methodological framework through integration of ethnography methods and its contributions to other perspectives to produce a thick description of language/genre use in the world of professions. Bhatia (2004) elaborates that:

“Ethnographic investigations focus on typical sites of engagement and interaction (Scollon 1998), highlighting analysis and understanding of practitioner advice and guidance, social structure, interactions, history, beliefs, goals of the professional community, physical circumstances influencing genre construction and modes available for genre construction and communication, all in the context of the historical development of the genre in question.”

(Bhatia, 2004, p. 161)

The last quadrant represents the *socio-critical perspective* where analyses are performed at a wider or broader context of social and political practices. Concepts and issues pertaining to “ideology and power, identities and motives and cross-cultural and intercultural environment, within which most of these discursive and disciplinary practices and genres are ... embedded” (Bhatia, 2004, p. 162) are frequently discussed. Genres also take the form of “social actions” (Miller, 1984) in the social space where interactional patterns are being investigated and they consist of the interaction of language and social structure, and the interaction between discourse and social changes.

In order for a genre analyst to encapsulate all these perspectives within the multi-perspective multidimensional framework model, a similar set of multidimensional analytical procedures is required. In conjunction with the framework in Figure 2.9, Bhatia (2004) has also outlined a parallel model of analytical procedures that draws several types of analytical data including textual data, socio-cognitive data, ethnographic data and critical data to account for a complete picture of professional discourse within his analytical framework of research procedures (see Figure 2.10).

With new developments in genre analysis, Bhatia has refined his earlier framework of genre analysis in 1993 to incorporate both the ethnographic and socio-cognitive perspectives in his seven step procedural model as listed below:

1. Place the given genre-text in a situational context.
2. Surveying existing literature.
3. Refining the situational/contextual analysis.
4. Selecting the corpus.
5. *[Investigate] textual, intertextual and interdiscursive perspectives.**
6. *[Perform] ethnographic analysis.**
7. Studying the institutional context.

* indicates new procedures that are re-introduced into the previous model

(Bhatia, 2004, p. 164-166)

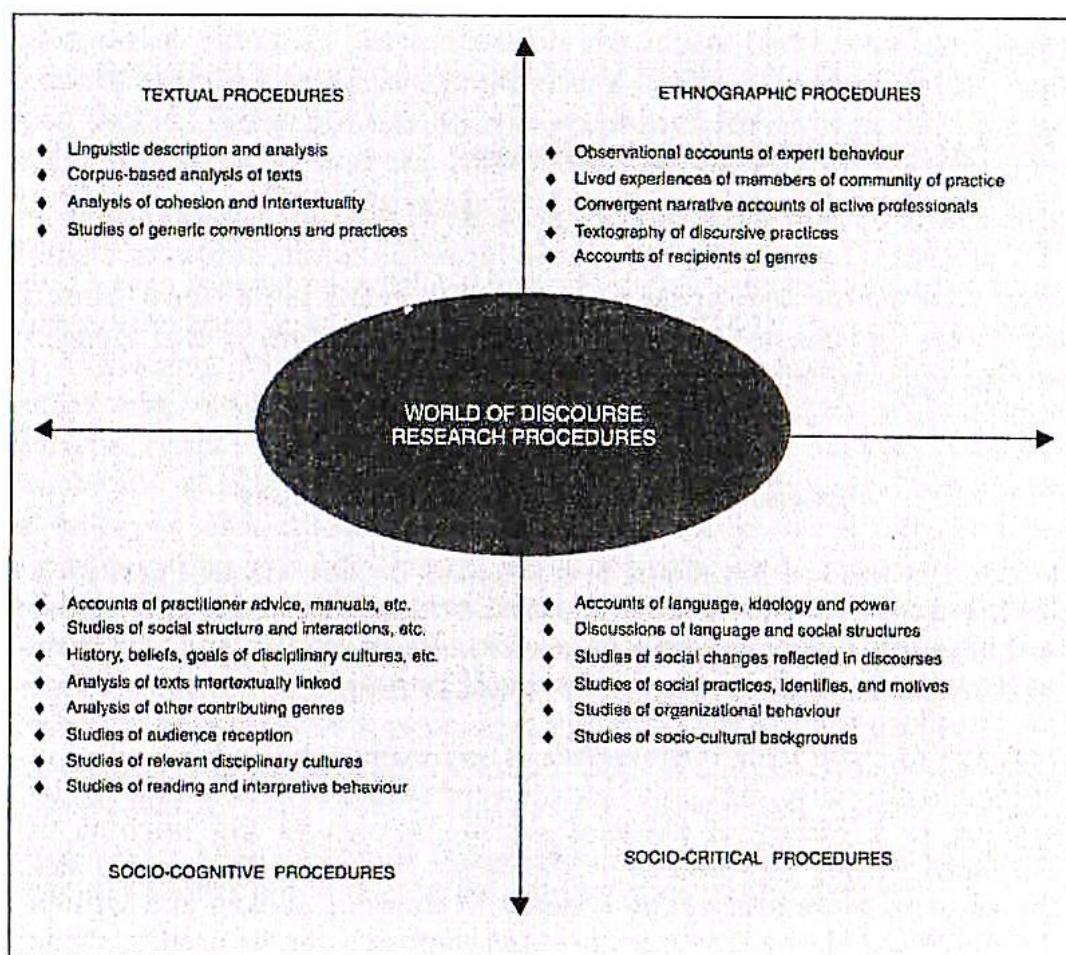


Figure 2.10: Research procedures in the world of discourse (adapted from Bhatia, 2004, p. 167).

2.4.4 Other paradigms of genre analysis

Other than the 3 conventional schools of genre analysis namely the Systemic Functional Linguistics (SFL), the New Rhetoric and the ESP, different paradigms have been introduced to the field besides Swales's (moves), Bhatia's (multi-dimensional) and Paltridge's (pragmatic) analytical frameworks. Genre analysis has been combined with contrastive rhetoric, corpus linguistics, historical/diachronic analysis and critical theory to study genre in academic and professional discourse.

Cross-cultural studies with genre analysis (contrastive rhetoric) often involve comparative investigations of genres of different cultures or languages (Azirah & Norizah, 2011, p. 155), cross-cultural differences that affect text meanings (Kinneavy, 1971, as cited in Scott, 2007) and variations of genres across linguistic and cultural communities. Contrastive rhetoric aims to promote successful acquisition of cultural

norms in multicultural settings for various pedagogical purposes and to “maintain the diversity amongst different languages and cultures” (Azirah & Norizah, 2011, p. 156). Examples of such research include Tessuto (2011): UK academic writing and Italian professional writing for legal opinions; Vergaro (2004): Italian and English sales promotion letters; van Mulken & van der Meer (2005): American and Dutch customer email replies; and Samraj (2005): abstracts and introductions of Conservation Biology and Wildlife Behaviour. Matrices of genre-based investigations across different languages, cultures and communities usually reveal interesting rhetorical variations, cultural sensitivities and discourse communities’ expectations in writing styles, linguistic features and semiotic choices.

Coupled with corpus-based linguistic analysis, genre analysis can become more credible when qualitative findings are supported and justified by statistical evidence and quantitative implications. A corpus embeds not just concordances or collocations of lexical and grammatical features of texts from a variety of native-language contexts, but is a valuable resource for tagging of discourse features such as rhetorical moves in a particular genre. Upton and Connor’s study in 2001 (as cited in Azirah & Norizah, 2011, p. 157) is an example of such research where they have “applied a moves-based analysis to a genre-specific learner corpus” (ibid.).

Historical genre analysis is a developmental research that examines the developments of disciplinary or professional genres from a diachronic perspective that studies the ‘textual dynamics’ of genres in their socio-historical contexts (Berkenkotter, 2008, p. 178). This paradigm suggests an evolutionary inquiry that investigates how genres have changed over time and what changes have been brought about to the discourse community and their historical practices. Genre analysts need to understand “the complex interactions between socio-historical, technological, demographic, and epistemological factors ... to track and interpret textual [dynamics]” (ibid., p. 189) in

relation to the changes in history. Bazerman (1988) conducted a diachronic study on scientific articles over a period of time and discovered “an important connection between the formation of a scientific discourse community and the development of appropriate discursive [practices]” (as cited in Berkenkotter & Huckin, 1995, p. 22).

Critical Genre Analysis or CGA, was first construed by Bhatia (2004, 2010) and implies “a critical study of discursive activities of professional cultures by focusing on [the notion of] ‘interdiscursivity’ as interaction between discursive and professional practices” (Bhatia, 2010, p. 48) that convey ‘private intentions’ to the discourse community. This multi-perspective and multi-dimensional model has been introduced in the earlier section and it involves appropriation of semiotic resources to achieve interdiscursivity, which underpins the critical aspects of genre analysis in past research such as Bhatia’s (2004, 2008a, 2008c, 2010) analysis of corporate disclosure practices, arbitration practices, public discourse (memorandum of understanding) and philanthropic fundraising cultures.

Other methods and approaches to discourse analysis that can be combined with genre analysis may include multimodal analysis, mediated discourse analysis and ethnography, *inter alia*. Explanations on these paradigms are not covered within these pages but they can be referred to in Bhatia, Flowerdew & Jones’s book (2008, p. 5-13).

2.5 GENERIC INTEGRITY OF GENRES

In general, generic integrity refers to the conventions and typical characteristics that mould text types into genres. Linguistically, it can be seen as “a socially constructed typical constellation of form-function correlations” (Bhatia, 2004, p. 123) that describes communication constructs which realise communicative purposes at the professional, academic, institutional or workplace levels. In addition, it is often constructed within professional goals and disciplinary cultures which it is associated with (ibid.).

Genres and its typical construction tend to change and evolve over time to reflect the complex and dynamic world of discourse. Hence, generic integrity is always in a state of flux and fluidity due to genre bending, invasion by colonisation and exploitation by expert members of the discourse society. Nevertheless, understanding genre integrity is important and its benefits are beyond pedagogical or training purposes. First and foremost, it enhances our knowledge on the roles and functions of genres in our daily living through engagements with language and other semiotic means in communication (Bhatia, 2004, p. 114). Secondly, it offers a broader understanding that the world of genres is complex, multifaceted and multidisciplinary, thus, the need for a multidimensional approach to analyse it. Lastly, generic integrity embeds recognizable and standardized constructs and conventions which allow verification and recognition of genres by its discourse members who are able to validate their generic characters (ibid., p. 115). For example, academic lexis and lexico-grammatical expressions such as ‘concepts’, ‘methods’, ‘approach’, ‘research’, ‘discourse’, ‘analysed’, and *inter alia*, signify the formal academic nature of text that define the identity of academic genres.

Generic integrity is an umbrella concept that can be characterised by indicators of *text-internal* and *text-external* features or combinations of both. These indicators are diverse in nature so they are “not static, fixed or prescribed, but often flexible, negotiable and/or sometimes contested” (Bhatia, 2004, p. 123). They are essentially important for genre analysis because genres operate at the socio-cognitive space in which tactical and professional practices often change or modify generic integrity. From the other perspectives, generic forms are linguistically constructed within the textual space and are described within the broader social contexts in the social space. These situations represent both the text-internal and text-external indicators of generic integrity that “contribute to and influence the production as well as the reception of ...

generic artefacts” (Bhatia, 2008d, p. 163) that contain multiple discourses, actions and voices (Bhatia, 2008c, p. 162).

Text-internal factors have always been the central theme to both discourse and genre analysts for a very long time. These factors incorporate aspects of *textual* information; *intertextual* elements and to some extent, *contextual* information. Textual indicators can be further described in terms of *lexical*, *rhetorical grammatical* and *discoursal* features (see Figure 2.11). All these elements are easily accessible and identified by researchers because of their linguistic dispositions but to genre users, or members of the professions, text-internal factors are usually elusive or unknown to them. Genre users “pay [very] little attention to a conscious understanding of linguistic resources that realise these genres” (Bhatia, 2004, p. 124).

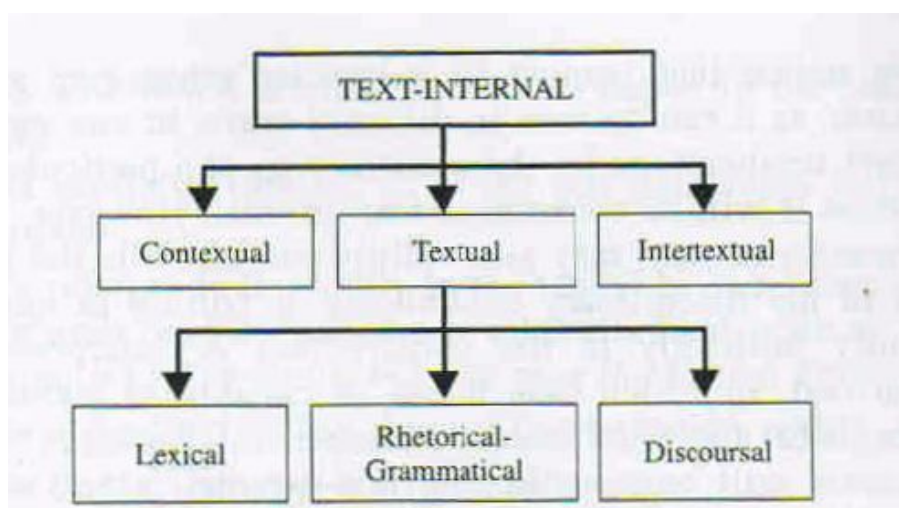


Figure 2.11: Text-internal indicators of generic integrity (adapted from Bhatia, 2004, p. 125).

There are also text-external indicators of genre integrity that experienced professionals and expert practitioners are fully aware of such as the *discursive procedures*, *disciplinary cultures* and *discursive practices* (see Figure 2.12). These aspects are used to “identify, construct, interpret, use and exploit ... genres to achieve their professional objectives” (Bhatia, 2004, p. 124). Discursive procedures explain genre construction by answering questions of who are involved, how the mechanism takes place and when or

what contributing genres are found; disciplinary cultures look at genre conventions, professional goals, objectives and identity, and organisational identity as well; and discursive practices include choices of genres and modes of communication used to suit a particular professional action (ibid., p. 124).

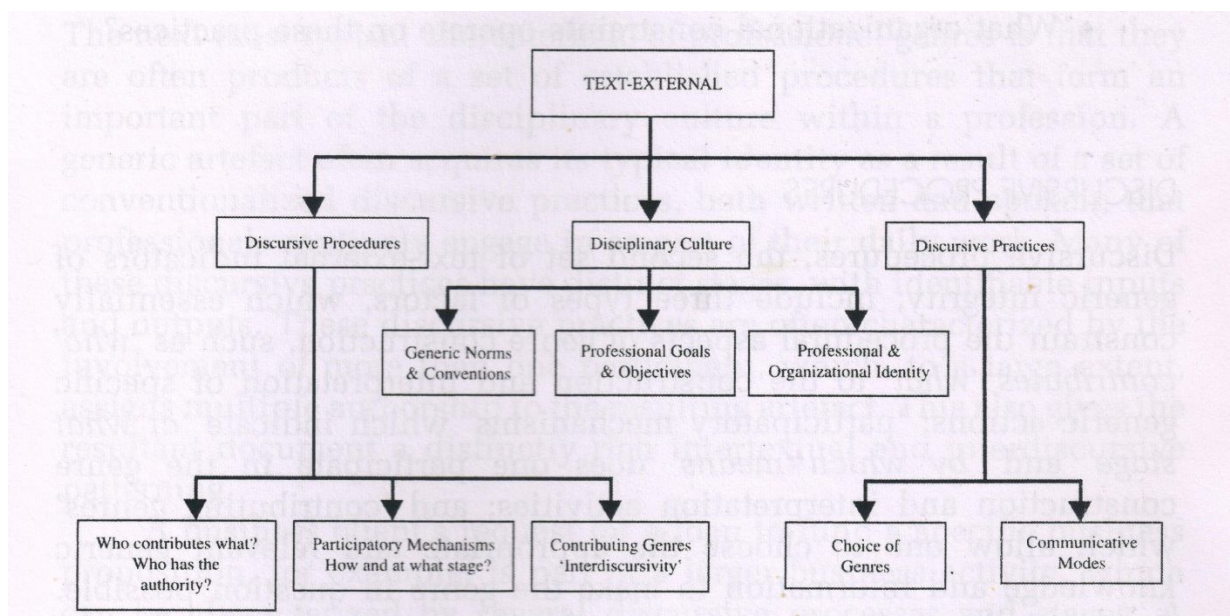


Figure 2.12: Text-external indicators of generic integrity (adapted from Bhatia, 2004, p. 127).

Both text-internal and text-external indicators of genre integrity are used to interpret the composition, structures and workings of genres at different analytical dimensions including the textual, tactical, professional and social space, in which the genres in question or discourse operates in.

2.5.1 Text-internal indicators of genre integrity

2.5.1.1 Contextual

Context includes the immediate and general context where the text is situated. It incorporates the communicative purpose, communicative context and aspects of text such as the following:

- The interrelationships between the text producers and the audience
- The background to the text and the medium in use

- The historical, socio-cultural, philosophic and/or occupational nature of the discipline the genre belongs
- The social structures, belief systems and goals of the academic, professional or workplace discourse community

(Bhatia, 2004, p. 125)

Context has direct implications on genre construction (text-internal) and “contributes to the nature and function of the disciplinary community or culture in questions” (text-external) (Bhatia, 2004, p. 126).

2.5.1.2 Textual

The textual aspects of a genre consist of linguistic resources of the following categories:

- Lexical – statistically significant aspects of lexico-grammar features
- Rhetorical-grammatical – text-patterning or textualisation of generic purposes and concerns
- Discoursal – cognitive patterning or discourse structuring of the genre; indicators of discoursal resources vary according to organisational elements in terms of information structures, rhetorical structures, schematic structures, discourse structures and move/cognitive structures

(Bhatia, 2004, p. 126)

2.5.1.3 Intertextuality

At the very beginning, especially in the area of critical theory and practice, the notion of intertextuality was developed through a perception that sees “every text as inherently intertext and ... inescapably influenced by precursors” (Leitch, 1983, p. 139) whereby “the utilisation of one text [is] dependent upon the knowledge of one or more previously encountered texts” (Beaugrande & Dressler, 1981, p. 10) (as cited in Paltridge, 1995, p. 395-396). In linguistics, Kristeva (1980) first defined the notion of intertextuality as

texts that are positioned on the “horizontal axis connecting the author and the reader of a text, and [the] vertical axis, which connects the text to other texts” (p. 69, as cited in Flowerdew & Wan, 2006, p. 137). Later Fairclough (1992) described it as an analytical construct or a “manifest, where specific reference is made to other texts within a text ... within the available orders of discourse” (as cited in *ibid.*, p. 137).

In sum, intertextuality can be seen as a construct or an instrument that can be used to account for the relationships within and between genres in the production, use and interpretation of texts, that is part of the social action and social structures within which they are used (Miller, 1984; Fairclough, 1992, as cited in Flowerdew & Wan, 2006, p. 137; Paltridge, 1995, p. 396; Bhatia, 2004, p. 127). The intertextual aspects of a genre therefore refer to the interactions between related genres as part of a genre set or system (Devitt, 1991; Bazerman, 1994). Bhatia (2004, p. 126-127) has elaborated on intertextuality as being the relationships, interconnections and interactions between the text in question and other texts that:

- provide a context.
- exist within and around the text.
- are explicitly referred to in the text.
- are referred to implicitly in the text.
- are embedded within the text.
- are mixed with the text.

Reflecting on Bhatia’s descriptions about intertextuality, Devitt (1991) sees that “any text is best understood within the context of other texts” (p. 336) and that there are clear overlaps in both views. In her study (1991, p. 137) on tax accounting letters and accounting practices, she categorises intertextuality into 3 concepts that echo Bhatia’s descriptions:

- ‘generic’ – drawing on previous texts written in response to similar situations

- ‘referential’ – use of reference within one text to another
- ‘functional’ – a text as being part of a large macro-text

2.5.2 Text-external indicators of genre integrity

2.5.2.1 Discursive practices

Discursive practices in simple terms refer to the actions of “constructing, using and interpreting professional genres” (Bhatia, 2008a, p. 175, 2010, p. 48). They are essentially outcomes of professional procedures and are embedded within specific professional cultures (Bhatia, 2010, p. 35-36). Discursive practices involved decisions on the appropriateness and choice of genres used to achieve professional objectives or disciplinary goals in specific professional contexts (Bhatia, 2004, p. 128).

This factor includes knowledge of effective communication modes that are available and suitable for specific professional actions and is closely related to the profession in which it is part of. Discursive practices often operate within the organisational constraints that are imposed by the genre in question (Bhatia, 2004, p. 128; Bhatia, 2010, p. 35-36). In a professional setting, they “determine and redefine professional and organisational identities and practices” (Bhatia, 2002b, p. 51).

Professional practices, or an action of “managing professional activities” (Bhatia, 2008a, p. 175, 2010, p. 48) sometimes overlap or exist in conflict with discursive practices in the institutional, professional or workplace contexts. The links between professional practices and discursive practices are useful as they underpin the importance of the notion of ‘interdiscursivity’ (as explained later) and the developments in genre theory and genre analysis (Bhatia, 2008a, p. 176).

2.5.2.2 Discursive procedures

This factor is associated with the characteristics of participants who make valid, authorised and appropriate contributions, or the procedural aspects of genre construction that answers the following concerns (Bhatia, 2004, p. 128-129, 2010, p. 35-36):

- ‘who’ contributes ‘what’ to the construction and interpretation of specific generic actions
- ‘participatory mechanisms’ that indicate what kinds of contributions, when (at what stage) and by which means that are allowed in the process
- the presence of ‘contributing genres’ that involve appropriation and justification of generic resources to make the genre in question, or the investigation of the notion called ‘interdiscursivity’

2.5.2.3 Interdiscursivity

Interdiscursivity refers to innovative attempts, sometimes driven by deliberate ‘private’ intentions’ that account for a variety of discursive processes and professional practices in genre construction, use, interpretation and exploitation for transformation or ‘bending’ of generic norms and conventions to create hybrid or novel constructs of genres by means of:

- Genre mixing (e.g. promotional features in academic introductions);
- Genre embedding (e.g. letter format in job advertisements);
- Exploitation of one set of generic conventions for another (e.g. parodies);
- System of genres (e.g. legislation cases, textbooks on legal problems);
- Changes and development in genres (e.g. academic introductions becomes book blurbs); or
- Appropriation of professional genres (e.g. fundraising letters becoming like sales promotional letters)

(Bhatia, 2004, p. 128-129; 2008a, p. 175; 2010, p. 35, 37)

Bhatia also claims that the notion of interdiscursivity is the function of “appropriation of generic [semiotic] resources” which may include textual, semantic, socio-pragmatic, generic and professional resources that focus on the relationships between and across three different kinds of contextual and text-external boundaries: *professional genres*, *professional practices* and *professional cultures*. These interdiscursive relations and interactions are illustrated in Figure 2.13 and Figure 2.14.

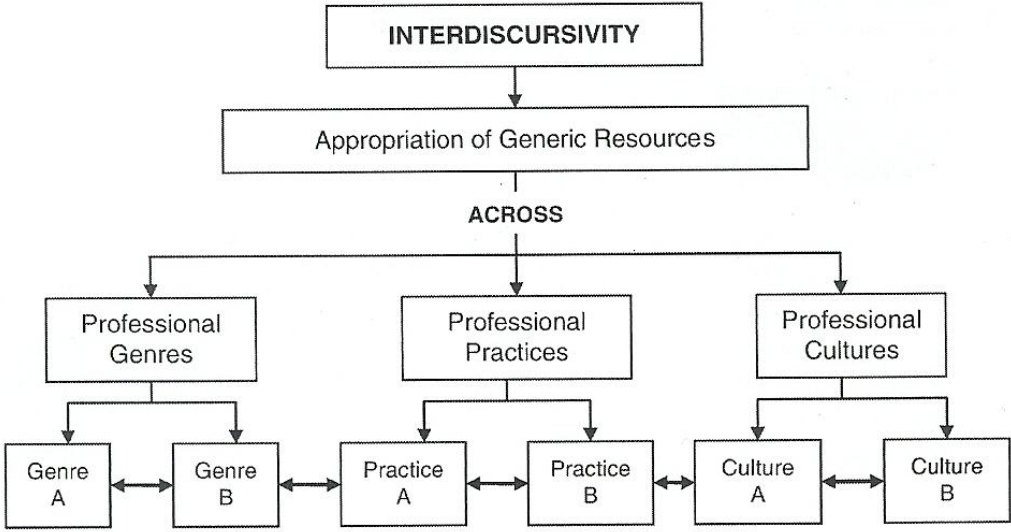


Figure 2.13: Interdiscursivity in professional contexts (adapted from Bhatia, 2010, p. 36).

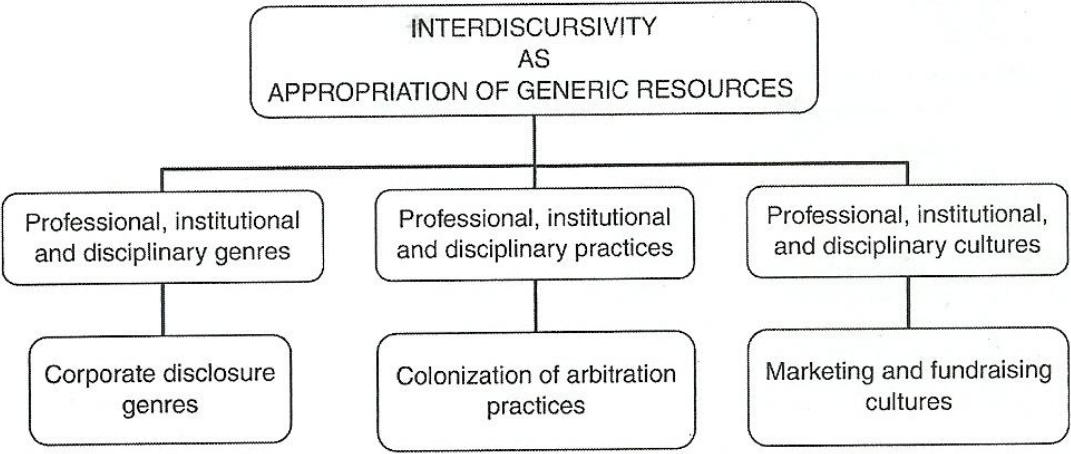


Figure 2.14: Interdiscursivity relationships across text-external resources (adapted from Bhatia, 2010, p.

His comprehensive studies of professional genres (2004, 2008a, 2008c, 2010) based on company annual reports, legislative writing in arbitration practices, commercial advertising and philanthropic fundraising cultures, and memorandum of understanding (public discourse concerning political and governmental changes within a nation) have shown empirical evidence of interdiscursivity at various levels across text-external boundaries in the context of the professional world. Interdiscursive phenomena are cleverly exploited by expert members of the discourse society to bend generic norms and conventions to serve specific private intentions at the tactical, socio-pragmatic and social space which are highly intertextual and interdiscursive in nature.

For example, interdiscursivity in the company annual report occurs through:

- Combinations of discourses in professional genres i.e. the accounting discourse, discourse of economics, public relations discourse and legal discourse;
- The process of ‘recontextualisation’ that involves “extrication of some part or aspect from a text or discourse, or from a genre of texts or discourses, and the fitting of this part or aspect into another context” (Linell, 1998, p. 145, as cited in Swales, 2004, p. 22). Thus, combined discourses with varying accessibility to its intended readership, technicality and complexity of information are strategically positioned and placed in the same interdiscursive space to activate textual proximity advantages and benefits to convey ‘private intentions’ that may presupposes factual reliability and credibility in the professional genre in question (Bhatia, 2010, p. 40-43); and
- The necessary tactical, pragmatic and innovative appropriation of generic resources to achieve these processes mentioned above.

2.5.2.4 Disciplinary cultures

Both discursive practices and discursive procedures take place within the context of disciplinary cultures to which a particular genre belongs. Disciplinary cultures impose

several kinds of constraints that govern and control the generic construction, use and interpretation of genres. Knowledge and boundaries of *professional goals and objectives*, *generic norms and conventions*, and *professional and organisational identities* are defined by the disciplinary and professional cultures of the genre in question (Bhatia, 2004, p. 130, 2010, p. 35-36).

Professional goals and objectives refer to valid, reliable and desirable objectives and goals that professional members are expected to achieve. These aims are identified by specific professions or determined at the level of professional workplace, organisations or institutions. Generic norms and conventions are “unstated behavioural principles that most professionals observe [and practice]” (Bhatia, 2004, p. 130) during the course of their professional activities, tasks or routines undertaken in their professional lives. These behavioural aspects form the constraints in discursive and professional practices, but are sometimes exploited by expert professionals to express or convey “additional private intentions within the socially accepted/recognised and shared communicative purposes” (ibid.).

Another factor that contributes to disciplinary cultures is the professional and organisational identities, which are preserved and expressed by norms and conventions used to respond to “recurring and novel rhetorical contexts” (Bhatia, 2004, p. 130) in professional activities. Professional identities are usually reflected by most genres because professionals construct, interpret and consume genres in more or less the same way as other professional members do. They would negotiate different and conflicting identities in their discourses by assuming:

- the ‘professional’ identities as members of a particular disciplinary community.
- the ‘organisational’ identities as members of specific organisations or institutions.
- the ‘social’ identities as valued members of social groups or the society.

- the ‘individual’ identities as indications of self-expressions.

(Bhatia, 2002b, p. 51-52)

2.5.2.5 Relationships between text-internal and text-external indicators

To sum up, both types of indicators of generic integrity are keys to providing a complete picture or comprehensive understanding of genres in the academic, professional, institutional or workplace contexts. Both text-internal and text-external factors offer a number of perspectives on generic integrity including the contextual perspective, socio-cognitive perspective, ethnographic perspective and institutional perspective (Bhatia, 2004, p. 132). These perspectives of generic integrity also include the linguistic features and textual elements (lexical and rhetorical-grammatical), cognitive or move structures, intertextuality and the notion of interdiscursivity.

2.6 HERITAGE AND ENVIRONMENTAL INTERPRETATION

2.6.1 Definitions of interpretation

We often associate the meaning of ‘interpretation’ with language translations by linguists or multilingual writers or speakers. Interpretation also refers to how one perceives a legal document or practices in legislation and courtrooms. To some extent, it may represent the “mystical explanations of dreams and omens” (Tilden, 1977, p. 3). However, ‘interpretation’ in this study has a distinct meaning in the field of heritage and environmental studies. The credit for the extended meaning of interpretation goes to John Muir, who was an early advocate of preservation for the wilderness in the 19th century as he wrote in his Yosemite notebook: “I’ll *interpret* the rocks, learn the language of flood, storm and the avalanche” (Wood, n.d.), and translated the elements of nature into a language to help his audience make meanings out of them (National Park Service, 2007). Sam Ham (1992) also defines ‘environmental interpretation’ as “translating the technical language of a natural science [and natural history] or related

field into terms and ideas that [laymen or non-scientists] can readily understand ... in a way that's entertaining and interesting to [sustain the concentration of] these people" (p. 3).

Interpretation is both an art and a science (Beck & Cable, 2011, p. xiii) and encompasses various inter-related meanings which are rooted in seminal literatures of the field, knowledge, communication, philosophy, science and human behaviour (ibid., p. vii). The following definitions are used to define interpretation based on works done by scholars and interpretive practitioners such as museum curators, nature guides and naturalists:

1. Interpretation is "an *educational activity* which aims to reveal meaning and relationships through the use of original objects, by firsthand experience, and by illustrative media [or by interpretive discourses], rather than simply to communicate factual information" (Tilden, 1957, p. 8).
2. Interpretation is "an *informational and inspirational process*, ... a *rendering*" (Beck & Cable, 2011, p. xvii, xxi) that "guide others to the secrets of nature" (Mills, 1920, p. 245) by helping them to feel "a sensitivity to beauty, complexity, variety, interrelatedness of the environment; a sense of wonder; and a desire to know" (Wallin, 1965, as cited in National Park Service, 2007, p. 4) in their journey to discover "a larger truth that lies behind any statement of fact ... [that] capitalise mere curiosity for the enrichment of the human mind and spirit" (Tilden, 1977, p. 8).
3. "Interpretation is an *approach to communication* ... separated from other forms of information transfer in that it is pleasurable [or enjoyable], relevant, organised, and has a theme" (Ham, 1992, p. 9; National Park Service, 2007, p. 5).

4. Interpretation “gives meaning to a ‘foreign’ landscape or event from the past or present” (Beck & Cable, 2011, p. xxi). In other words, it refers to ‘a sense of place’ (Carter, 1997) that has special and significant values where “celebration[s] of place [, people, event] and things, of culture and nature, creativity and folklore, great successes and failures in our history” (Colquhoun, 2005, p. viii) are held.
5. Interpretation is “*a catalyst*” that provides an opportunity to the audience to forge “*emotional and intellectual connections*” between their interests and the “meanings and significance inherent in the resources” (National Park Service, 2001 & National Association for Interpretation, n.d., as cited in National Park Service, 2007) and it “enriches lives through engaging emotions, enhancing experiences and deepening understanding of people, places, events and objects from past and present” (Association of for Heritage Interpretation, 2005, as cited in *ibid.*), sometimes to promote “recreational experiences that turn to magic” (Beck & Cable, 2011, p. xxi).
6. Interpretation is “a process of profound gift-giving”, where an interpreter is bestowed with an ability to provide gifts “that have multiple meanings and can transform lives” (Beck & Cable, 2002, p. 9-10), e.g., the gift of knowledge, the gift of love (as described by Tilden in 1977) as the “priceless ingredient” (p. 89-94) and the gift of hope “for a rich [and] fulfilled life ... in a future whereby generations to come inherit a prosperous and beautiful world” (Beck & Cable, 2002, p. 9-10) amidst the dilemma of environmental degradation faced today.
7. In simplistic terms, “heritage [or environmental] interpretation takes place when someone with knowledge of nature, culture, or history shares it with another” (Benton, 2009, p. 7) and it is both a communication process and a field of its own.

To sum up all of the above, heritage or environmental interpretation involves meaningful communication and education that touches the hearts and minds of the audience through revelations of the truth or relationships and learning beyond the foregrounds of natural, cultural, place, history or heritage resources. An effective interpretation “enhances our understanding, appreciation, and, therefore, protection of historic sites and natural wonders” (Beck & Cable, 2011, px. xvii). This phrase echoes the saying of an anonymous U.S. National Park Service ranger in Tilden’s (1977) book: *“Through interpretation, understanding; through understanding, appreciation; through appreciation, protection”* (p. 38). The philosophical orientation of this quote has been validated and re-examined with contemporary cognitive and social psychology theories by Sam Ham in 2009, where he asserts that Tilden’s intuitive understanding of communication is aligned with the explanations drawn from cognitive science.

2.6.2 Interpretation and natural history

In relation to natural history, interpretation “encourages greater sensitivity to one’s surroundings, heightened ecological and cultural awareness, [environmental literacy], and meaningful links to the past and future” (Beck & Cable, 2011, p. xxii). Individuals may receive “the opportunity to connect with the beauty found in nature ... [that] offer moments of contemplation and reflection ... [of] the stability and resilience of nature” to find comforts, inspirations, directions, ideas and hopes through interpretation (ibid., p. xxv). Motivated by the philosophical orientation explained earlier, individuals may initiate their own path of learning and exploration on the natural and cultural history to help them understand, appreciate, and ultimately protect and conserve heritage and legacy to foster sustainability in the society.

2.6.3 Environmental interpretation, education and communication

Environmental interpretation is sometimes confused with environmental education or environmental communication as they share overlapping relationships and have subtle differences amongst themselves (see Figure 2.15). Environmental communication represents an overarching concept that encompasses three fields namely communication, education and interpretation. Communicative skills are essential to educate, to interpret and to communicate. To delineate the differences between these three fields, one “uses institutional setting of the informational exchange and audience focus to sort between formal, informal, and non-formal” (Mocker & Spear, 1982, as cited in Jurin, Roush & Danter, 2010, p. 31).

Environmental education occurs in “formal settings” and focuses on formal education where learning is highly structured and is achieved by interaction with a teacher (Jurin, Roush & Danter, 2010, p. 32). Learners are “captive audiences” who are usually involuntary, pay attention, extrinsically motivated, involve formal typical settings and are expected to achieve educational goals of an institution (Ham, 1992, p. 8). Meanwhile, environmental communication features non-formal education in non-formal settings which “involves information disseminated primarily through mass media – television, radio, pamphlets, magazines, the Internet, etc. ... [and] these communications transcend place and time” (Jurin, Roush & Danter, 2010, p. 32). Learning is controlled solely by the learners themselves as a leisure activity based on individual’s goals and interests.

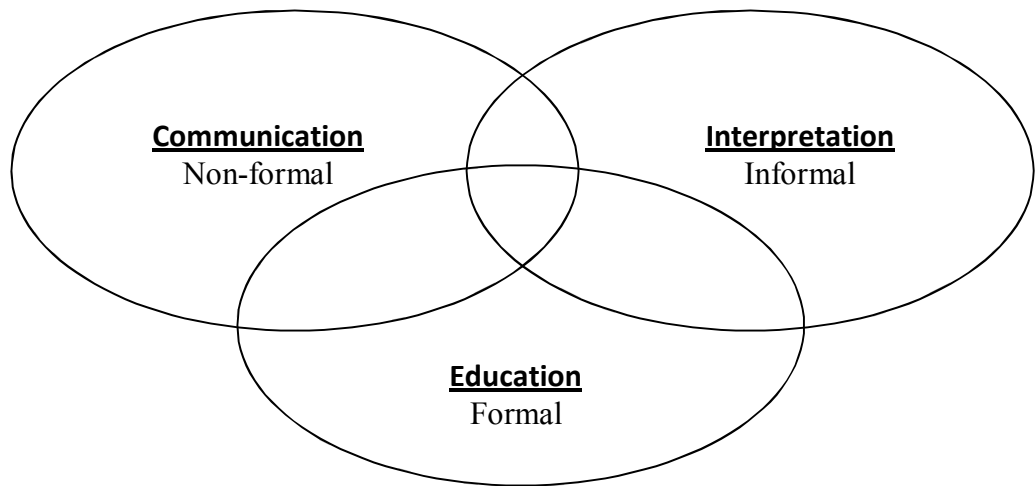


Figure 2.15: Relationships between environmental communication, education and interpretation (adapted from Jurin, Roush & Danter, 2010, p. 33).

On the other hand, environmental interpretation are based on “informal education” and occurs in “informal settings” (Jurin, Roush & Danter, 2010, p. 32) where the audience is considered as “non-captive audiences” who are voluntary, may not necessarily pay attention, intrinsically motivated by their passions, interests and desires, and involves leisure-based settings or facilities such as museums, parks, nature centres, historical sites, etc. (Ham, 1992, p. 8). Learners may elect their own personal interactions with the facilitator/interpreter and ask questions freely. Besides bridging between the audience and the natural, cultural and heritage resources via intellectual and emotional connections, environmental interpretation is also “a *conservation communication tool* [that advocates] simultaneous deliverance of three interpretive objectives [which are] educational, emotional and behavioural” (Manohar et al., 2005, p.1) to stimulate interest in nature and conservation of the resources in question.

2.6.4 Brief history of interpretation

John Muir (1838-1914) was the first person who modelled as a modern preservationist in his time when he wrote about his adventures in nature and wild life in the form of letters, books and essays. He was the founder of Sierra Club, which is now one of the most important conservation bodies in the United States. Then, Enos Mills (1870-1922)

befriended John Muir and subsequently wrote on similar topics upon joining the conservation movement. His works, including a seminal book published in 1920 share a remarkable resemblance to Freeman Tilden's (1957) outlined principles of interpretation. Interpretive philosophy was first introduced by these three practitioners and their works have become valuable classics today.

Then, Sam Ham, a professor in the Department of Resource Recreation and Tourism at the University of Idaho's College of Natural Resources, introduced the concept of 'environmental interpretation' in 1992 and he distinguishes the field from other communication studies. He puts forth four qualities that are central to the profession of interpretation: pleasurable, relevant, organised and thematic (Ham, 2002). By the end of the 20th century, Larry Beck and Ted Cable had authored their book published in 1988 entitled *Interpretation for the 21st Century*, drawing on both Mills and Tilden's principles, and developed a total of 15 principles of interpretation to meet the evolving needs of the field in the modern world.

Subsequently, the evolution of interpretation snowballed into various conceptions (Benton, 2009) over time and has resulted in a multitude of foundational texts and empirical studies that are influenced by various fields and disciplines such as recreation, natural resource management, education and tourism. A new era of interpretation is marked by Larry Beck and Ted Cable who have just published the 3rd edition of their book (2011), entitled *The Gifts of Interpretation*. In this volume, they associated the principles of interpretation with gifts that include the gift of "revelation, provocation, illumination, beauty, joy, passion, and hope" (Beck & Cable, 2011, p. xvi). The authors express how gifts of nature and culture are bestowed from one to another in a rewarding and meaningful manner making the world a better place for all (ibid.). This metaphor was first conceptualised by them in 2002 when they described 'interpretation as a gift' based on the Lewis Hyde's account (1983, as cited in Beck & Cable, 2002a, p.

8) that “a work of art [is] a gift” and ‘interpretation is an art’ (Mills, 1920; Tilden, 1957, 1977).

2.6.5 Interpretation research: Disciplinary and multidisciplinary studies

2.6.5.1 Theoretical, conceptual and interpretive studies

Interpretation experienced a rapid growth in the 20th century and is still undergoing development and change. Benton (2009) presented comprehensive findings in relation to four conceptions of interpretation with a model that “reflects the historical progression of four strands of goals within the field” (p. 8). These varying goals “seek to connect visitors to resources ... [to] influence [positive] behaviour ... [to] convey environmental messages [by means of environmental literacy] ... [and to] use tourism ideas [to promote tourism outcomes and] appeal to visitor’s travel interests” (ibid.). Benton successfully laid out all important foundational texts and empirical studies based on these conceptions, and examined terms, concepts and ideas in correspondence to each goal of interpretation. He also explained the interfaces in between these strands that are influenced by other fields or disciplines such as recreation, natural and heritage resource management, sociology, social- and communication psychology, education and communication studies, and nature-based or eco- and cultural tourism. Hence, interpretation is a multidisciplinary inquiry by nature.

Papers that are specific to the field include Knapp & Benton’s (2004) case study on the interpretive programs in five national parks, and many other past studies that are similar: e.g., Beck & Cable’s (2002a) discussion of the meaning of interpretation as a revelation, an art and a gift; detailed historical perspectives for the definition of interpretation (Brochu & Merriman, 2002); roles of persuasion and meaning-making of thematic interpretation (Ham & Weiler, 2003); and re-examination of Tilden’s interpretive philosophical orientation that begins with interpretation to understanding, followed by appreciation and ending with protection, by Sam Ham in 2009.

2.6.5.2 Interpretation research

There have been evaluations and reviews carried out on graduates' research, in particularly in Australia (Weiler, 2005; Weiler, Black & Ballantyne, 2009) and Taiwan (Wu & Chen, 2005) on interpretation. These studies have shown that there's a shift in the trends of interpretive research, in both countries, where the disciplinary focus has diversified into broader multidisciplinary disciplines such as sociology, psychology, communication, cultural studies, tourism, education and management (also in Ballantyne & Uzzell, 1999, p. 61). Theoretical research in interpretation has blossomed and become more 'applied focus' (Ham, 2004, p. 65) which influences practices in the field. The context of national parks, museums and heritage places have also been expanded to include tour operators' activities, tourist attractions, recreational areas, events and nature-based or eco-tourism sites (Weiler, 2005, p. 39). Thus, more interpretive research are desired to encapsulate various perspectives and multi-approaches to promote "an active partnership [of interpretation] with the social science [and humanities] research community" (Zarki, 2004, p. 74). Ballantyne and Uzzell (1999) have also discussed international trends and future directions in interpretation for the Australians in terms of research and practice: the need to examine influences dervied from world tourism trends; interpretation as a tool for management of both visitor and natural resources; the rise of eco-tourism concerning "the interplay between nature and culture" (p. 62); and the social dimensions of "meaning making" (also in Larsen, 2004, p. 71) to encourage questioning of ideas and deriving personal implications, motivation and learning.

2.6.5.3 Different approaches to interpretation

Interdisciplinary works on interpretation are common because the field has evolved through time and has been influenced and incepted by other disciplines. For example,

Atkinson & Mullins (1998) look at the relationships between social marketing and interpretation; while Cable & Cadden (2006) examine the roots of environmental education and interpretation by a comparison between Tilden's interpretive principles and Dewey's philosophy of education. Other advances in interpretation include works that draw on interactionist theory and sociological as well as spatial perspectives (Archer & Wearing, 2003), geointerpretation – marrying geography, maps and facts, spatial cognition with interpretation (Bailey et al., 2007), etc. Notably, linguistics and language-based studies in relation to interpretation are scarce, except for those that examine interpretation from a communication perspective.

2.6.5.4 Abundant communication psychology perspectives of interpretation

At the heart of both environmental interpretation and education, and all other environmental communication approaches and methodologies, therein lie human cognitive, affective and behavioural mechanisms that have been extensively researched in the past (Kohl, 2008, p. 130). There have been numerous works which explore the psychological perspective on visitor learning and cognitive aspects in non-formal environmental settings. These studies are usually 'bottom-up' (Loomis, 1996, p. 40) where information is collected from visitors for an evaluation of their learning to form intervention strategies for interpretation.

Several principles and theories of cognitive (intelligence), affective (emotions, attitudes and beliefs) and conative (impulse and tendency) psychology have been discussed within the field: the three principles of 'attention', i.e. 'selectivity', 'motivated focusing' and 'limited capacity' (Bitgood, 2000); the internal and external added attraction of 'affect' in relation to 'emotion' (Webb, 2000); the study of 'intrinsic motivation' (Loomis, 1996); and the 'theory of reasoned action and planned behaviour' (Fishbein & Ajzen, 1975, 1991, 1992, as cited in Ham & Krumpe, 1996, p. 17). All explain the three constructs of belief systems namely 'behavioural beliefs', 'normative

beliefs’ and ‘control beliefs’. According to these researchers, the saliency of psychological variables examined is crucial for interpretive design (text and talk) and interventions (activities and programmes) to convincingly advocate educational, emotional and behavioural outcomes in the general audience.

2.6.5.5 Few interpretive works pertaining to linguistics and language use

There is only a handful of interpretation research that involves examination of language in use in interpretive materials, particularly on labels and signage at recreational settings. Cialdini (1996), Winter et al. (1998) and Winter (2006) have looked at the constructions of normative messages based on social norms that would influence audience behaviour. These messages are conceptualised in two types of norms and are usually framed positively or negatively with specific language features (see Table 2.5).

		Types of normative messages	
		Descriptive <i>(the ‘is’ of behaviour)</i>	Injunctive <i>(the ‘ought’ of behaviour)</i>
Message framing (language features)	Prescriptive <i>(positive)</i>	Tells <i>what other people do</i> with a focus on encouraging effective or adaptive behaviour. <i>e.g. Most visitors dispose of trash in the receptacles...</i>	Tells <i>what people should do</i> with a focus on encouraging effective or adaptive behaviour. <i>e.g. Please dispose of trash in the receptacles...</i>
	Proscriptive <i>(negative)</i>	Tells <i>what other people do</i> with a focus on discouraging disapproved behaviour. <i>e.g. Many visitors leave litter in the campsites...</i>	Tells <i>what people should do</i> with a focus on discouraging disapproved behaviour. <i>e.g. Please do not litter.</i>

Table 2.5: Social norms in normative messages (adapted and modified from Winter et al., 1998, p. 41).

From a pragmatic perspective, we can see that politeness is useful in expressing injunctive form of norms to mitigate “inference of reward or punishment for adherence to, or violation of, certain actions” (Winter et al., 1998, p. 41), while a descriptive form has more explanatory features that are constructed by referencing to other’s actions. Winter (2006) claims that the injunctive-proscriptive form is more effective in gaining desired behaviour, hence the deterrence of depreciative activities by means of behavioural commands. Such language norm is most appropriate if “behaviour is

desired shortly after exposure to a message [in the case of off-trail hiking] ... [but] may not be the most effective when longer-term maintenance of actions is desired” (ibid., p.35).

Another interpretation study that incorporates language use compares problem-targeted messages and salient belief-targeted messages, where Ham & Krumpe (1996) argued that the latter are more closely aligned to the audience’s belief systems with regards to a particular environmental practice. Psycholinguistics has also been looked at in interpretation research e.g., Knapp’s (2006) examination of the recollection (long-term memory) of participations of an interpretive programme to propose a “model of learning for interpretation related to episodic/semantic memory systems” (p. 21). Genre analysis, a sub-field of linguistics has not yet been associated with interpretation research according to my knowledge.

2.6.5.6 Interpretation in the Malaysian context

Conception of interpretation in Malaysia, in particular, may be the biggest problem and challenge towards achieving successful interpretation for conservation. The field is often mistaken and confused with environmental education, and has the “added linguistic, cultural and educational barriers, [that impede] its implementation in developing countries” (Kohl et al., 2001, as cited in Kohl, 2008, p. 129). Nevertheless, interpretation is given top priority in forestry and wildlife-related training programmes in the nation, and it is the ‘core’ subject and focus for all practitioners in nature or tour guiding (rangers, foresters, guides), eco-tourism and forest or wildlife conservation (King & Ady, personal communication, June 2010).

A brief walkthrough of some milestones and development of the field within Malaysia are traced systematically below:

- In June 1972, an international meeting on the environment called the “United Nations Conference on the Human Environment” was held in Stockholm and

has led to an “*environmental movement* involving industrial and *developing countries* with participation of both public and private sectors” (UNESCO, 1992, as cited in Noor Azlin et al., 2006, p. 79). Environmental concerns have shifted from a mitigation-based approach to an integrative one that blends environmental concerns with economic growth by means of *sustainable development* and respect for environmental ecosystems. Agenda 21, Chapter 36 emphasises the critical aspects of *education* in promoting sustainability to improve human capacity in addressing environmental and development issues (ibid.).

- Subsequently, the Local Agenda 21 of Malaysia was launched to encourage public participation “towards sustainable management and conservation of resources” (Malaysia, 2000, as cited in Noor Azlin et al., 2006, p. 79). Aspired by such initiative, the government has envisioned the country to be a ‘Garden Nation’ with twenty million trees planted by the year 2020 (Ismail, 1999, as cited in ibid., p. 80). The ‘millennium planting’ event involving 1 million trees that were planted at the same time all over Malaysia has “[qualifies the nation] a world record ... [and has] proven the willingness of the public to be involved in environmental activities” (ibid.).
- Article 13 of the convention on biodiversity (UNESCO, 1992, as cited in Manohar et al., 2005, p. 7 & Noor Azlin et al., 2006, p. 81) recognised the need for *education and public awareness* to secure active involvement from all stakeholders – giving new directions and motivation for “*environmental learning or interpretation* ... [that is] not only educational, but also entertaining [and can] positively [influence or affect] people’s conservation attitudes and behaviour” (Noor Azlin et al., 2006, p. 81).

- The National Ecotourism Plan (Anon, 1997) prepared by the Ministry of Culture, Arts and Tourism ... also advocates “the *importance of Interpretation* in its guidelines for Interpretation, Education and Guide Training [in] Guideline No. 14” (as cited in Manohar et al., 2005, p. 2). Anon further described that both education and interpretation are *key management tools* that serve as a *communication bridge* between the resources and visitors to enhance the visitors’ experiences and satisfaction at recreational sites.
- Spin-offs from the national aspiration for interpretation, “the Department of Forestry has embarked on a series of interpretive training programmes for rangers and foresters working in recreation forests throughout Peninsular Malaysia” and the course of ‘*environmental interpretation*’ has been included in the curriculum of the Forestry school in Kepong, Selangor, with the hope that graduates will become stewards and advocates in conservation by providing effective communication and education to the visitors (Manohar et al., 2005, p. 1). Further to this, the field has also been introduced within the nature guides’ syllabus in their training programmes (PERHILITAN, n.d.-b).
- As far as interpretive research is concerned, few studies have been conducted within Malaysia. A collaborative project known as “Nature Interpretation and Communications” by FRIM, FDPM, UPM, DBKL, MNS, DFC and KVL that is supported by DANIDA in 2003 has been carried out to improve existing training curricula for forest staff with nature interpretation and communication components and to provide in-service training programmes with a similar focus to existing staff in Malaysia. Interviews, workshops and courses on training needs assessment, nature interpretation and interpretive skills were conducted from 2003 to 2005 at various recreational sites. Training contents, background study of the participants and recommendations have been collected and analysed

to offer implications and recommendations for capacity building in interpretation. Suggestions include providing basic, train-the-trainers and specialised knowledge-based training programmes, obtaining successful buy-in and support from the management, and having empathy towards the visitors. These will facilitate their learning about the environment so some of them would become advocates for conservation in the future (Manohar et al., 2005).

- Interpretation principles and presentation skills among the forest staff have been assessed by Noor Azlin et al. (2005) and the results of descriptive analysis have shown that participants are weak in the principles related to ‘creativity’, ‘provoke’ and ‘whole’ (as explained later) based on low mean scores that are being computed. They concluded that environmental interpretation is “a very important management tool [that] conveys conservation messages for sustainable forest management” and when practiced effectively, it can also improve the Malaysian image (Noor Azlin et al., 2005; 2006, p. 84) at the regional and global levels.
- Recently, PEMANDU, a unit under the Prime Minister of Malaysia’s Department that is charged with the role of overseeing the nation’s ETP and GTP (PEMANDU, n.d.) has initiated a train-the-trainer programme for nature guides and incorporated the elements of environmental education [presumably with the elements of interpretation], English language training and soft skills learning (Phong & Loh, personal communication, 21 July 2011).

Based on the above reviews on interpretation in the Malaysian context, we can surmise that the field is crucial for the country’s development and there is an imminent need for further research to provide valuable inputs for improving interpretive materials, training programmes and better conceptions of interpretation among practitioners and the public citizens.

2.6.6 Principles of interpretation

Tilden's principles of interpretation (1957) have been widely discussed in research and they have become the foundation of interpretive philosophy since its inception by Enos Mills, a pioneer in providing a poetic representation of interpretation with adventurous stories of nature in 1920. These principles have been described thoroughly in Benton's work (2009) on the four conception phases of interpretation from theory to practice; Sam Ham's paper (2009) on the philosophical orientations from interpretation to understanding, appreciation, then protection; and LaPage's interesting claim (2002) of the relevance between Tilden's principles and the 'Eureka process', which is defined by the mental processes from the initial stage of recognition or "imprinting, an initial *impression* that proceeds through periods of *reflection* [or germination] and *saturation* to *illumination* (Eureka), and concludes with *validation*" (Edwards, 1986, as cited in LaPage, 2002, p. 25). LaPage's assertion brilliantly links the "Eureka Moment – a flash of insight that was previously missing, when everything finally comes together" (2002, p. 25) with each of Tilden's principles of "*relevance, information, the story, provocation, holism and specialisation*" (p. 28) – each principle is explained below:

2.6.6.1 The principle of 'RELATE' (Relevance)

"An interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile"

(Tilden, 1977, p. 11).

To capture the audience chief interest or what they mostly care about, interpretation of resources must connect to the "audience personal experience, thoughts, hopes, way of life, social position, personality [and ideas]" (ibid., p. 13) because they constantly translate words heard or read as best they can into their "own intimate knowledge and experience" (p. 14). Therefore, effective interpretation requires the provision of external

stimuli and situations that are capable of triggering internal cognitive maps of information and memories that make sense inside the human brain (Beck & Cable, 2002b, p. 14-15). Relevance of interpretation can be facilitated through understanding of the audiences' demographics, their motivations, preferred learning styles as well as injection of humour, histories, discovery of novelty, and a powerful force known as enthusiasm in the delivery (ibid., p. 16-20).

The "desire to relate to the [audience] by making connections is a foundational tenet of interpretation" (Knapp & Benton, 2004, p. 11) by which the opportunities for emotional and intellectual connections (also in Larsen & Mather, 2002, p. 19) will help the audience to delineate "individualised meanings, shared meanings and resource meanings" (Knapp & Benton, 2004, p. 11) for making and sustaining those which are meaningful to them. Since natural resources possess plurality of meanings by nature, it is important to recognise the negotiation process in 'meaning-making' that creates both 'ascribed' and 'inherent' meanings which require specific connections for relevance to occur (Larsen & Mather, 2002, p. 19-20; Beck & Cable, 2002b, p. 15). Ultimately, interpretation has a practical mission to light up a 'spark' of interest and "to connect us to our heritage – and perhaps for our very survival" (Beck & Cable, 2002b, p. 15; Larsen & Mather, 2002, p. 20).

In most cases, interpreters may relate to the audience by using personal language (by using pronouns such as '*you*' and '*yours*'), providing conditions ('*if*'), adding a tug of the imagination, allowing elements or resources to inform or speak (the use of '*it*') and suggesting to work together or participate in activities during interpretation ('*we*', '*propose*' and '*together*') (Tilden, 1977, p. 16; Beck & Cable, 2002b, p. 18).

2.6.6.2 *The principle of 'REVEAL' (Information)*

“Information, as such, is not Interpretation. Interpretation is revelation based upon information. But they are entirely different things. However, all interpretation includes information”

(Tilden, 1977, p. 18).

Revelation distinguishes interpretation from the "teacher-tell model of information transfer" (Ham & Weiler, 2003, p. 4) by “going beyond merely teaching [or communicating] facts to revealing the [inner] meanings [and the truth or relationships] inherent in the resource that are relevant to the audience” (Beck & Cable, 2002a, p.7). Information is presented in a constructivist manner to reveal what matters most to the audience so they can develop their own understanding and make personal meanings out of it (Ham, 2009, p. 51). It serves as the raw material for interpretation and all interpretation must be based on accurate and comprehensive information that reveals deeper meanings and the truth or relationships beyond facts to the audience (Tilden, 1977, p. 22; Beck & Cable, 2002b, p. 28).

To communicate meaning in interpretation is to connect the physical aspects of a resource with associated concepts. According to the US National Park Service's Interpretive Development Program, the key to revealing meanings is to establish connections between the ‘tangibles’ and ‘intangibles’. All tangibles are concrete, which can be sensed, and have the capacity to reveal meanings, therefore they can ‘move our souls’ (Beck & Cable, 2002b, p. 24). Natural resources, be it the plants or wildlife, places or sites (heritage or historic) and geological formations are examples of tangible elements. Intangible elements, in which tangible resources represent or are associated with, are abstract ideas, processes, systems, values (cultural or indigenous) and concepts that are not perceivable by our senses but they carry meanings in our heart and minds. Groups of intangibles that are widely known to almost everyone who can relate to them

but in different ways are known as the ‘universal concepts’ which may include beauty, community, courage, responsibility, life and death, good and evil, family, *inter alia*. For example, “the tangible resource of wilderness also represents intangible concepts such as harmony, self-sufficiency, wholeness, [survival] and spirituality” (Beck & Cable, 2002b, p. 24). Through interpretation, information about the tangibles are linked and connected to the features of the intangibles, thereby revealing meanings and addressing relevant universal concepts that evoke meaningful insights and the truth or relationships for the audience. When the essence of resources is absorbed via such mechanism, interpretation helps the audience to “care *about* and encourage them to care *for* resources” (Tanaka Shozo, as cited in Larsen & Mather, 2002, p. 19).

Other ways to forge emotional and intellectual connections include the use of knowledge about the local geology, ecology and history, and by association of resources with numbers and emotional expressions. In a nutshell, revelation by means of interpretation should produce effects where the audience would “enjoy understandingly”, obtained the “phosphorescence of learning” (as written by Emily Dickson), and lead to “exhilarating ... experiences in which one may exclaim, ‘Ah-ha! Suddenly I see everything in a different light!’” (Beck & Cable, 2002b, p. 30).

2.6.6.3 *The principle of ‘ART’ (The story)*

“Interpretation is an art, which combines many arts, whether the materials presented are scientific, historical or architectural. Any art is in some degree teachable”

(Tilden, 1977, p. 26).

The interpreter who conveys an interpretive message is seen as an artist who mixes his/her own artistic appreciation of a resource by a legitimate poetic license to bring about form and life, as well as to bring together disparate parts into a whole meaningful story based on one’s personalised experience, knowledge, talents, imagination, creativity, styles and background (Tilden, 1977, p. 28; Beck & Cable, 2002a, p. 8;

Knapp & Benton, 2004, p. 10). The art forms involve creative acts and processes that put together an interesting, spellbinding, captivating, exciting and sometimes humorous story that informs, entertains and enlightens the audience with regards to the resources being interpreted. These combinations also “rely on a proficiency ... called ‘rhetoric’ ... [which refers to] the art of writing and speaking” (Tilden, 1977, p. 31) that transform scientific discovery and explanation into creative forms to deliver impact and meaningful reception.

An effective story can be crafted with combined arts and creative elements that includes the use of examples, cause and effect relationships, analogies, anecdotes, metaphors, similes (the use of ‘*like*’ or ‘*as*’), famous quotations, humour, repetition of key phrases, current news events, and other techniques (Beck & Cable, 2002b, p. 33-34). Sometimes, story-telling with elements of myth, legends, tales, history, culture, poetry, music and evangelism (by relaying new environmental beliefs) may also be used to deliver dramatic or compelling effects. Combination of many arts, thus, elevates the power of interpretation.

2.6.6.4 The principle of ‘PROVOKE’

“The chief aim of Interpretation is not instruction, but provocation”

(Tilden, 1977, p. 32).

This principle is one of the key ingredients of interpretation. The purpose is not mere recitation of facts by instruction, but by provocation to stimulate a person to think deeply, wonder or ponder and sometimes explore new possibilities about a thing, place or concept (Tilden, 1977, p. 38; Ham & Weiler, 2003, p. 4). In psychology, an effortful thought described by such procedures is known as ‘elaboration’ – a process that creates or otherwise impacts a person’s understanding and meaning that produces new beliefs, or causes existing beliefs to be changed, replaced or reinforced. Subsequently, feelings and behaviours that are consistent with the new or modified beliefs will be produced

and this may impact the person's psyche as proven by empirical research on psychological theories in interpretation such as the elaboration likelihood model, theory of reason action and planned behaviour, and schema theory (Ham, 2009, p. 52; Ham & Weiler, 2003, p. 4-5).

Provocation also carries the responsibility to inspire or entice a person to learn more of the natural and cultural history of something through his/her passion, new feelings and new thinking to satisfy internal desires to find something of personal value in order to attain an "ah-ha moment or the statement, 'I never thought of that before'" (Larsen & Mather, 2002, p. 19). Thus, this principle would provide sophisticated access to greater complexity, understanding, appreciation, new perspectives or meanings, attachment, enlightenment or the so called 'Eureka moment' and broaden the horizon of interests and knowledge of a person. The art of provocation embodies the interplay of multi-faceted virtues such as courage and humility to communicate controversial issues and sensitive attitudes toward cultural and natural resources, establishing common grounds and agreements, and convincing audience of the importance and significance of heritage resources that affect their lives (Beck & Cable, 2002b, p. 44-46).

2.6.6.5 The principle of 'WHOLE' (Holism)

"Interpretation should aim to present a whole rather than a part, and must address itself
to the whole man rather than any phase"

(Tilden, 1977, p. 40).

Any interpretation must aim to present a collection of related facts that make up a complete and meaningful theme in communication. Samuel Whittemore Boggs, a geographer, once spoke about "the wholesomeness of wholeness" (as cited in Tilden, 1977, p. 44) and what he meant was the concept of unity in interpretive messages, the needs of a whole person and holistic interpretation. In the process of revelation, a link is needed to connect tangible resources with intangible meanings. Tangibles are therefore

lack of value if not for their derived meanings which are acquired from the context of intangible meanings. Larsen & Mather (2002) states “this is true for the resource as a whole, as well as for all its parts” (p. 18). By linking interpretive messages with natural resources and through holistic associations with intangible meanings and universal concepts, a complete picture or story is told.

Another important aspect in this principle is to treat the interpreter or the audience as a whole person. Both parties are constantly engaged in exchanges of knowledge, experiences, understandings, motives, curiosities, and so on while communication takes place. Hence, reconciliation, compromise and accommodation of what is considered to be ‘whole’ to a person’s needs are essential to ensure effective delivery of holistic interpretation that synergises interconnected parts to form a thematic story with a beginning, a middle and an end.

2.6.6.6 The principle of ‘CHILDREN’ (Audience analysis)

“Interpretation addressed to children (say, up to the age of twelve) should not be a dilution of the presentation to adults, but should follow a fundamentally different approach. To be at its best it will require a separate program”

(Tilden, 1977, p. 47).

Tilden considers children as a special group of audience whose demographic characteristics are different from adults. They have different needs, interests and perceptions of nature and thus, different approaches for interpretation are necessary. Appropriateness of interpretive contents is essential to engage and attract children to learn. An approach for children may derive from human expressions of action (the use of songs, rhymes and sounds, participation), fantasy (animations, creative figures and imaginations) and instruction (targeted for the young minds) that are carefully combined for effective interpretation (Machlis & Field, as cited in Beck & Cable, 2002b, p. 63). In most cases, “the delight in the superlative” (such as the *biggest*, *largest*, *longest* and

smallest) is appealing to children and they would most probably display a slight aversion towards pure information that adults would otherwise appreciate (Tilden, 1977, p. 49).

Beck & Cable (2002b) extended this principle to cater for interpretation throughout the lifespan not just for children, but also for other uniform groups such as teenagers and senior citizens that should follow fundamentally different approaches (p. 57). Hence, the principle of ‘children’ may refer to audience analysis and interpretation has to be customised or tailor-made according to the demographic characteristics or segments of the audience. For teenagers and young adults, interpretive materials may incorporate ideas that are more action-oriented, technologically driven and futuristic whereas for the seniors, they tend to reflect on important memories, have stronger intrinsic interest with the past and histories, and capable of appreciating the depth that interpretation offers (*ibid.*, p. 64-67). It is also important for interpretation to address the local communities, foreign audience and children of different age groups as well (Noor Azlin et al., 2006, p. 82).

2.6.6.7 Other principles

There are many other principles of interpretation that complement Tilden’s collection for practice in today’s contemporary society. Most of these are elaborated in Larry Beck and Ted Cable’s book (2002) in the revised version (2011) whereby the principles of interpretation are framed as valuable ‘gifts’ to humanity. Some principles do overlaps with Tilden’s collection whilst some others are new, current and relevant to the present day:

- Bringing the past alive or into the present (the historical aspects)
- Enough is enough and nothing in excess
- Interpretive writing and the written word
- Interpreting the mystery of beauty

- The priceless ingredients of passion and love
- Use of modern technologies and tools*
- Attracting support to flourish* – financial, political, administrative, etc.
- Communication or presentation skills and techniques*
- Thoughtful interpretive planning and design*

* New principles of interpretation that are included by Larry Beck and Ted Cable in 2002

2.6.6.8 Recap of the basics

In a nutshell, the main ‘principles of interpretation’ (Tilden, 1957) namely ‘Relate’, ‘Reveal’, ‘Art’, ‘Whole’, ‘Provoke’ and ‘Children’ are the keys to fostering understanding, appreciation and protection of our natural, cultural and historical legacy. There is no better explanation on what interpretation does than what is described below:

“Interpretation does not provide answers; it poses questions. Interpretation does not teach; it offers opportunities for emotional and intellectual connections. Interpretation does not educate; it provokes increasingly sophisticated appreciation and understanding. Interpretation does not tell people how it is; it reveals personal significance”

(Larsen & Mather, 2002, p. 19)

2.6.7 Other interpretive practices

Space is too limited here to explain in detail a complete collection of interpretive practices beyond the main principles, but some general ones are briefly summarised below:

- Provide multiple points of view which are informed by a broad, multidisciplinary base to establish relevance, greater provocation and friendly dialogues or discourse (Larsen & Mather, 2002, p. 22).

- Emphasise the human dimension of the stories told to make them pleasurable, entertaining, meaningful and personal; Stories, however have to be validated and related to facts (Noor Azlin et al., 2006, p. 82).
- Simplify complicated ideas about the natural world and sharing them with a general audience by linking interpretation ideas, goals and audience awareness (Youngentob & Hostetler, 2003, p. 2).
- Persuasive by means of themes, language and meaning-making. To be thematic, interpretation has to focus on key ideas, the ‘take-home’ messages for the audience to remember – whole or bigger ideas, the punch line, morals of the story, interesting discoveries and overriding messages. Language, on the other hand involves using “active, colourful, and descriptive verbiage”, and injunctive norms to be persuasive. A theme is not just an “arbitrary statement of fact ... aimed at producing factual recall, but rather as purposeful meaning-making” aimed to impact human’s psyche to achieve the knowing, feeling and doing of interpretive objectives (Ham, 2001, p. 2; Ham & Weiler, 2003, p. 5; Youngentob & Hostetler, 2003, p. 4; Noor Azlin et al., 2006, p. 82).
- Take advantage of any ‘teachable moment’ – interpreting something at the right time at the right place when an event (or a process) is concurrent to maximise impromptu meaning-making and understanding (Ady, personal communication, June 2010). In the context of education theory, this concept refers to the potential that makes task learning possible only when timing is right at a specific point or unique moment (Havighurst, 1952, p. 7).
- Last but not the least, interpretation seeks to empower the audience by implying ownership by relating natural resources as ‘theirs’ (with pronouns such as *you*, *yours*, *we*, *ours*) and by informing people about “what is going on in their

community ... [to] highlight the potentials and opportunities for them to get involved” (Youngentob & Hostetler, 2003, p. 5).

2.6.8 Interpretive writing

Tilden (1977) has talked about inscriptions or written words on interpretive signs, markers, trail labels and printed literature. He emphasises the importance of both thinking (90%) and composition (10%) in any written interpretive works (p. 58-59). All writing should start from and focus on the audience with alluring and inspiring languages that reflect a thorough understanding of the subject and are readily comprehensible (Tilden, 1977, p. 59; Beck & Cable, 2002b, p. 118). Tilden (1977) also suggests using humour, being “one of the touchiest qualities of inscriptional writing ... [and consists of] a mixture of love and wit”, and sometimes “giving life [or personalities] to the elements for them to speak their minds” in interpretive writing (p. 66).

Undeniably, written words are a powerful means of communication, which makes them interpretive when intellectual and emotional connections are forged between the audiences and the meanings and significance of the resource. Lois Zeimann (2009) calls this “writing that changes the way people see the world around them” in his presentation slides at the National Scenic Byways Conference in Denver, Colorado. Written interpretation provides some advantages that other forms do not. Interpretive materials and the words that mould it can be read at the audience’s pace, read repeatedly, read anytime or anywhere, and most importantly, they are not transient (unlike spoken discourse that does not outlive its moment of production unless recorded) thereby can last for generations (Beck & Cable, 2002b, p. 124).

Alan Leftridge (2006) promoted interpretive writing as a genre, where it is not an exclusive style of writing, but contains elements that set it apart from other overlapping styles or sub-genres such as scientific writing, science writing, historical

writing, technical writing, promotional writing, informational writing and creative writing (see Table 2.6). He postulated that interpretive writing “is a blending of these styles in various proportions ... [and] the resulting message must be *goal-directed*, with the intent of eliciting a *pro-social* response” from the reader (Leftridge, 2006, p. 7-8). Zeimann (2009) agreed with this definition with an addition that interpretive writing is also “*objective focused*, [where] you have an end in mind when you start”. Furthermore, it has to complement the other purpose of making “intellectual and emotional connections between the reader and the resource” (Leftridge, 2006, p. 7). In contrary with interpretive writing, science writing does not elicit a pro-social effect, and technical writing does not build upon the reader’s prior knowledge; however, informational writing forms the base for revelation, and interpretive writing is similar to creative writing in terms of making the relevant emotional connections by means of artistic impressions. Thus, interpretive writing is a combination of these writing styles with more sophisticated aims as defined in the preceeding text.

Writing style / type	Description
Scientific writing	Based on facts and deductions, and relies on technical scientific language used by a community with similar academic background
Science writing	Similar to scientific writing but does not relies on technical language, and usually includes a human element , e.g., first person in the form of a story
Historical writing	Contains facts about past events that are usually significant in human history
Technical writing	Leads to the learning of skills or techniques to accomplish a specific task – may contains operations and mechanical processes
Promotional writing	Has the intention of selling something, a product, a service or a cause by advertising, marketing, etc.
Informational writing	Communicates descriptive factual data for reference or other use
Creative writing	An artistic impression that evokes sensory impressions and images – may draws on metaphors, analogies, visualisations, poetry, etc.

Table 2.6: Overlapping writing styles with interpretive writing
(adapted and expanded from Leftridge, 2006, p. 7-8).

Nature writing, on the other hand, is very common in natural history and can be interpretive when the definition of interpretation applies. It is a style that is generally defined as a “non-fiction prose writing about the natural environment ... and

incorporates personal observations [or experiences] of and philosophical reflections upon nature” (Lane Community College Library, n.d.). Sub-genres of nature writing includes essays on natural history, rambles, stories of nature excursions, essays of solitude or escape, and travel and adventure writing, to name a few. Just like interpretive writing, nature writing is relational and it talks “about the interconnections and interrelationships that forms our world” (Harton, n.d.). It is born out of love, awe and respect that weave hope, faith and love of the world of living and non-living into words for the world. According to Schutten (2011), nature writing embodies a story that ‘make sense’ to enliven or awaken the corporeal experience or sensorial understanding between human and more than human entities through an intimate reciprocal process that “encourage us to listen to the natural world that makes up our communities – [for example,] as we touch the bark of a tree, we feel the tree *touching us* [in return]” (p. 229-230). In this context, nature writing evokes the possibility of emotional connections through human senses with the land [or natural elements] which may eventually become a part of interpretive writing.

Alan Leftridge (2006) was the first person who coined the phrase ‘definable genre’ for interpretive writing (p. 10) which contains characteristics similar to other writing styles, but with subtle differences. He claimed that interpretive writing is made up of elements that are recognisable in terms of lexico-grammar and they perform the basic functions of interpretation. In addition, they are measurable, reflect the writing traditions of interpretive writers and are recognised by the interpretive community. He outlined five basic functions of interpretive writing:

1. *Interpretive writing is ‘goal-directed’* – therefore, it fulfils a purpose to enhance readers’ higher-level understanding and challenge them to learn something new
2. *Interpretive writing ‘relates to something tangible’* – tangibles are identified by noun phrase that represent their attributes which are measurable and verifiable

3. *The attributes of the tangible are associated with its 'intangible qualities', the inherent meanings of the tangibles* – they are the subjective perceptions of the audience on the intangible attributes that are invoked by the tangibles
4. *The meaningful qualities of the tangibles are associated with a 'universal concept'* – abstract and big ideas or understanding that everyone on Earth shares; concepts such as family, work, time, love, history, trade, etc. (as explained earlier)
5. *Interpretive writing creates 'an opportunity' for the reader to form an 'intellectual and emotional connection' with the tangible* – these connections are essential to provoke readers to think about the tangible, understand it, appreciate it, and eventually care about and protect it; by making the resource (or the tangible) relevant to the life of the reader, deeper meanings and the truth or relationships are revealed and discovered

(Leftridge, 2006, p. 10-11)

Note: Apostrophes (‘’) are added in the original quotations (in *italics*) for emphasis.

In any interpretive copy, the first words that are read by readers are the titles and leads. These elements inform what to expect in the message that follows in interpretive writing (Leftridge, 2006, p. 51). A title can be a complete short sentence or a fragment of phrases that express the main theme or ‘what’ of the story by means of verb that attracts the reader’s attention. Lead, on the other hand, follows after the title and marks the beginning of the interpretive story to be told. Leftridge (2006) claimed that if the lead fails to hold the reader’s interest, the interpretive effort will be ineffective (p. 53). Writing strategies and techniques for the title, the lead or the interpretive story includes:

- Asking the audience’s the *most important question(s)* – the one related to the interpretive theme and answers what readers want to know about e.g., “Why do lions roar?”, “Do salmon grow on trees?”, etc.

- *Announcing* or declaring about something that grabs attention – e.g., “Meet Loon – a baboon whose favourite food is broccoli!”
- Giving a concise descriptive *definition* of things or concepts to be interpreted
- Beginning with an *anecdote* – account of an event through narration to establish understanding
- Using *figurative language or figures of speech* – mentally challenging and entertaining symbolic language abstractions for adults such as “metaphors (saying one thing is another in two dissimilar things), similes (an assessment of two things by using the words *like*, *as* or *is*), personification (giving human qualities to something non-human)”, analogies (similarity between things) and comparisons
- Starting with a *fundamental premise* or factual position – e.g. “Discover greatness!”
- Using powerful and famous *quotations* – cite attractive quotes that are theme-related
- Making an assertion that does not connect/make sense (a *discordant statement*) to encourage readers to read more to gain mental balance – e.g. “*Cheaters Sometimes Prosper: Exotic Grass in Joshua Tree National Park ... The problem: The fire regime in Joshua Tree National Park ...*”
- Expressing the “light touch” that Tilden advocates for interpretation by *painting the picture* of the scene or an image for the readers
- Beginning with a *story* about a famous person, the writer’s personal experience or someone’s expressions when they encountered the resource
- Putting the *most important observation* that relates to the readers – e.g. “*SPEED KILLS* more than 100 bears each year [picture of a bear] *SLOW DOWN* and save a life”

- Writing with *active (action) verbs* – forms that express an action; replacing a weak verb with a stronger expression to achieve powerful impact, e.g. “The National Park *is* 100km from the town of ...” can be rephrased to become “The National Park *spans* 100km from the town of ...”
- Using *active voice* instead of passives in sentence constructions
- Including *alliteration*, “the repetition of the opening consonant sounds in words close to one another” (common in tongue twisters e.g. “The Seeing See Little”) and relevant forms of *poetry* whenever appropriate.

(Adapted and modified from Leftridge, 2006, Chapter 8, 11-14)

Lois Zeimann (2009) has also suggested additional tools to guide interpretive writing:

- Relating to the audience’s values with *personal language* – by using pronouns such as *you, your*, etc.
- Using *grabbers, teasers* and *humour* – to “make startling statement, an outrageous claim, a cute rhyme, a contrived situation, or an intriguing question”
- Linking science to *human history* – providing information on indigenous knowledge of the resource, it’s uses and the community’s religious or cultural practices related to it
- Choosing sounds and phrases that control *pacing and rhythm* as well as *onomatopoeia* (word that sounds like what it represents e.g. bee *buzz*, cow *moo*, water *splash*, etc.).

The basics of all interpretive writing seem to include concise and precise composition, comprehensible ideas and meanings, balance of techniques used (e.g., limit overused cliché words), and most importantly, all the principles of interpretation (Tilden, 1957; Ham, 2002; Beck & Cable, 2002b; Leftridge, 2006; Zeimann, 2009).

2.7 SUMMARY

Literature reviews on topics such as discourse analysis, genre theories, genre analysis, generic integrity and interpretation are crucial to this research. These topics contributed to the development of a robust conceptual framework (as explained later) used for data analysis and discussion of findings.

Throughout the review, relevant past theoretical works and empirical studies have been discussed thoroughly to inform my study. Important gaps in particular segments of the literature, especially on the absence of genre-based and multiperspectival discourse-analytic research on natural history texts have been identified when they become apparent. Thus, this critical review of current literature provides support and contributes to the necessity and purpose of this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

The purpose of this research is to carry out a socio-cognitive analysis of written genres in natural history. Research questions that are employed are: (a) What are the genres in natural history? (b) How do the disciplinary culture and professional practices shape the integrity of these genres in natural history? This chapter includes research design, the corpus, the methods as well as the coding scheme and ends with a brief concluding summary.

3.2 RESEARCH DESIGN

3.2.1 Research approach

Qualitative approach embraces this research because the topic being studied is centred on language, linguistics and communication, and heavily depends on the subjective perceptions of the researcher in describing the complexity of ‘language in use’ in natural history. The ‘worldview’ (Cuba, 1990, as cited in Creswell, 2009, p. 6) called ‘social constructivism’ governs the formation of this research – the study seeks to understand the complexity of the world of genres in natural history by recognising that meanings are constructed based on their social perspectives, and understanding the context or setting in which they are situated (*ibid.*, p. 8-9). This philosophical orientation is closely related to the postmodernism system where it advocates multiple ways of knowing (Post Modern Psychology, n.d.) to accommodate the apparent realities that are plural and dynamic. The complexity of professional communication and their discourses (natural history genres), which are explored in this research fit the preceding views; therefore, a qualitative research grounded in its essential constructivist orientation is feasible based on the research purpose.

Many of the characteristics that this research inherits are also derived from the definitions underlying the qualitative approach. A contrasting quantitative research that

tests hypotheses to produce facts and to infer relationships between variables is not feasible in this context. Therefore, a pure qualitative approach is used because: (a) the researcher shapes the interpretation of the meanings being constructed from the data collected (b) the research involves ‘inductive analysis’ (Patton, 1990; 2002, as cited in Bloomberg & Volpe, 2008, p. 102) where patterns, categories and themes are drawn from the data (c) the research is based on an emergent design due to the exploratory nature of the research (d) the research employs multiple theoretical lens and gives a holistic account to represent the complexity involved (e) the research is capable of generating rich data to address the research questions (Creswell, 2009, p. 175-176; Bloomberg & Volpe, 2008, p. 80).

The three traditions of qualitative research that are employed by this research is grounded theory, content analysis and discourse analysis. Grounded theory is used in which the researcher tries to derive an abstract representation of the interactions (Creswell, 2009, p. 13) that are grounded in the views presented by the data in a systematic approach. “Constant comparison of data with emerging categories” (ibid.) is carried out where patterns are evaluated based on a working conceptual framework (as explained later) to generate fine-tuned categories of information, thus themes for subsequent analysis. It is important to note that a pure grounded theory uses predetermined categories (from the conceptual framework) to fit the data into such categories (Bloomberg & Volpe, 2008, p. 102) – hence, a partial tradition is used by this research. Content analysis, defined as “the study of recorded human communications, such as books, websites, paintings and laws” (Babbie, 2009, chap. 11) is also useful in this research because it involves looking into written genres that communicate information and knowledge related to natural history in the social context. Again, a partial tradition of content analysis is used to address the research questions by means of

answering mainly the ‘what-’ and ‘how-’ questions that illuminate the topics and strategies used in the data respectively.

Discourse analysis is the main approach that this research adopts. Language in use or language situated in the social context where the reader/writer interacts with the natural history text (Fairclough, 1992, as cited in Baxter, 2010, p. 120) is examined thoroughly to produce a ‘thick description’ of the data. This is a detailed narrative that “shows the full complexity and depth” (Holliday, 2010, p. 99) and an explanatory account of “what is it that’s going on” (Goffman, 1967, as cited in Candlin, 2011) within and across the professional domains related to natural history. The sub-approach that is central in this research of written texts is genre analysis. Both microanalysis of language (lexical choices and move structures) with a macro level discussion (disciplinary culture and professional practices) are combined to achieve the above purposes.

3.2.2 The research corpus

Purposive sampling (Merriam, 1998, as cited in Creswell, 2009, p. 69) is used to select natural history texts that can reveal rich and relevant information in order to obtain insights and understanding of the possible genres under investigation. The research site is Malaysia that has numerous natural forests and landscapes and therefore, natural history plays a major role in nature education and conservation. Text samples are collected from a publication by Malaysian Nature Society (henceforth MNS) named *Malaysian Naturalist* (henceforth, MN), a quarterly published magazine about nature and conservation. MNS is Malaysia’s largest and oldest non-government environmental organisation which was first established in 1940 and its mission is to “promote the conservation of Malaysia’s natural heritage” (MNS, 2012). MN readership mainly consists of MNS members and the public. Its natural history contents are local and it

covers discussions about conservation and environment as well. These rich-features in MN are precisely why they are used as the research corpus.

Five issues of MN from the year 2011 until the present (May 2012) were collected (see Appendix A for cover pages and Table 3.1 for their descriptions). Each issue contains about 50-60 pages of content.

Date	Issue No	Featured title	Cover page graphic
Mac 2011	64-3	Malaysia's Forests in Pictures	A huge tree in the greenery forest.
Jun 2011	64-4	MNS Merdeka Award Projects	A close-up of an orchid.
Sep 2011	65-1	100 Years of Bird-Watching	A kingfisher perching on a rock.
Dec 2011	65-2	Walk on the Wild Side: Trailblazer	Lake-side at dawn.
Mac 2012	65-3	The Artistry of Raptors	Aerial display of raptors above the lighthouse.

Table 3.1: The research corpus of MN from March 2011 to March 2012.

A total of 94 text articles/genres were initially selected by the researcher to get a glimpse of the composition of the data. Further selections were then made according to specific criterion based on research purposes as shown in Table 3.2. The imminent features or characteristics used for selection of texts include the following considerations: (a) contents must be related to nature, conservation, the environment or their relative counterparts (b) exclusion of the front (cover page) and back matter (c) exclusion of all preface contents including the call for contributors, table of contents and the MN subscription form.

RQ	Purpose/Topic investigated	MN Issues	Sample size (texts/articles)
1	Genres in natural history (holistic)	Mac 2011 – Mac 2012	94 (in total)
	Genre bending (hybrid genres)	Mac 2011 – Mac 2012	15 (selected)
	Genre chain (specific)	Mac 2009, Mac 2010, Dec 2011	3 (selected)
1 & 2	Genre colony, move structure analysis, disciplinary culture and professional practices (very specific – interpretive genres)	Mac 2011, Jun 2011, Sep 2011, Mac 2012	4 (selected) [approximately 6611 words]
2	Disciplinary culture (specific)	Mac 2011 – Mac 2012	Arbitrary

	Professional practices (specific)	Mac 2011 – Mac 2012	Arbitrary
	The practice of teachable moments (specific) – this requires data from past MN which is beyond the coverage of the research corpus, but fortunately they are accessible by the researcher.	Dec 2005, Mac 2006, Mac 2007, Jun 2007, Jun 2008, Mac 2009, Mac 2010, Mac 2011 – Mac 2012	9 (selected)
Key: RQ = Research question			

Table 3.2: Sampled texts from MN based on general and specific research questions.

3.2.3 Information needed for the research

In seeking to answer the research questions, the information needed is listed in Table 3.3.

Type of information	Topics that form the conceptual framework	Sources from original literature (unless otherwise specified)
Contextual information	<ul style="list-style-type: none"> Natural history – definitions, history, background information in Malaysia 	<ul style="list-style-type: none"> Books Online media – articles, news, documents, dictionaries, blogs, wikis, organisational websites, etc. (derivative literature)
Theoretical information	<ul style="list-style-type: none"> Genres – concepts and theories Genre analysis – analytical frameworks, theories, multidimensional models Principles of interpretation Nature and interpretive writing Disciplinary cultures Professional practices 	<ul style="list-style-type: none"> Books Journal articles Interpretive guidelines, handbooks, manuals, programmes, etc. (derivative literature)
Related information	<ul style="list-style-type: none"> Research on interpretation Research on genre analysis of professional discourse Communication studies Natural history education Applied linguistics and interdisciplinary research 	<ul style="list-style-type: none"> Books Articles from the <i>Journal of Interpretation Research</i> (1996-2008) Journal articles from the <i>English for Specific Purposes</i> (2001-2011)
Methodological information	<ul style="list-style-type: none"> Qualitative research – worldviews, etc. Grounded theory, content analysis and discourse analysis Analytical findings and discussion 	<ul style="list-style-type: none"> Books Online articles and e-books (derivative literature)

Table 3.3: Types of information needed for the research, their purposes and sources.

3.2.4 Overview of research design

Activities that were carried out in this research are summarised in the following list:

1. An in-depth review of literature was conducted to obtain knowledge, insights and contribution of other researchers in the field of natural history, genre analysis and interpretation. For details of information needed for the research, please see Table 3.3.
2. Following the literature review, a conceptual framework (as explained later) was drawn based on the theoretical grounding that is relevant to the research. This was developed to guide data analysis, interpretation and the discussion of findings at the later stage. Changes to the conceptual framework were made in the later stages to refine its usability according to the various circumstances that arise from the research.
3. Data was collected via qualitative research methods that were chosen: (a) document review – primary data (b) observation – secondary data. Documents were readily available but some texts had to be sourced out by some searching whilst observations are conducted periodically as and when there were nature/conservation events, talks, guided walks and environmental programmes.
4. Subsequently, texts were analysed and re-analysed several times to observe categories of information and emerging patterns that were combined into themes for interpretation and discussion of findings. This phase was time consuming and involved looking back and forth between the data, findings and the adopted conceptual framework, which is grounded on interdisciplinary theories.
5. Findings and discussions were compiled, written and illustrated with charts, diagrams and tabular forms. These were discussed with peers to gather feedback, ideas and critical insights to fine-tune and improve the analysis or interpretation of findings.

6. Finally and preceding the write-up of the research, the conceptual framework was evaluated with the findings, exemplars gathered from the data and refined accordingly.

3.2.5 Data collection methods

The main method that was used to collect data for this research is document review. In light of the nature of this research which is ‘text-oriented’ (“writing as an outcome of activity” or features of text), ‘writer-oriented’ (“emphasises the actions of writers ... anticipate particular readers and the responses of those readers to what is written”) and ‘reader-oriented’ (seeing texts as ‘discourse’ or language in use as a “response to a particular communicative ... purposes and functions”) (Hyland, 2010, p. 192-194), the main source of data is the writings themselves; hence, the use of natural history (or its relative counterparts) texts as objects of research. The samples in MN represent data which were carefully considered due to the attention given by the editorial team in compiling them. Nevertheless, the texts would have been reviewed properly because of the prestige and image of MNS and although not all the contributors are equally articulate and perceptive (Creswell, 2009, p. 180), they are members of the discourse and practicing community.

The other supplementary method that was employed is observation. Although no structured protocol was used, the researcher took down ‘descriptive notes’ (descriptions and accounts of particular events or activities) and ‘reflective notes’ that consist of the researcher’s personal thoughts such as “speculations, feelings, problems, ideas, hunches [and] impressions” (Bogdan & Biklen, 1992, as cited in Creswell, 2009, p. 182). Ten observation sessions were conducted where the researcher was both an observer, and sometimes, a participant at the settings where nature/conservation/environmental activities were held in the period between July 2010 and Dec 2011 (1 ½ years). This method can be considered informal and serves as an immersion strategy to get some

insights on the different forms of genres in the world of natural history i.e. spoken and multi-modal types which may supplement the understanding of the context that would help the researcher to address the research questions.

Data collection methods employed in this research are based on the purposes and research procedures that come from the socio-cognitive perspective according to Bhatia's (2004) multi-perspective multidimensional analytical framework for genre analysis and the relevant procedures for discourse analysis (see Figure 3.1).


TEXTUAL PERSPECTIVES <ul style="list-style-type: none"> Discourse/rhetorical or cognitive structures Intertextuality and interdiscursivity Generic conventions and practices TEXTUAL PROCEDURES <ul style="list-style-type: none"> Analysis of cohesion and intertextuality Studies of generic conventions and practices 	ETHNOGRAPHIC PERSPECTIVES <ul style="list-style-type: none"> History, beliefs, goals of the professional community ETHNOGRAPHIC PROCEDURES <ul style="list-style-type: none"> Observational accounts of expert behaviour
Research Method Used: <i>Document review</i>	Research Method Used: <i>Observation</i>
<div style="text-align: center;">  <p>WORLD OF DISCOURSE MULTIDIMENSIONAL ANALYTICAL PERSPECTIVES AND RESEARCH PROCEDURES</p> </div>	
SOCIO-COGNITIVE PERSPECTIVES <ul style="list-style-type: none"> Patterns of generic integrity Nature and function of disciplinary cultures Modes and patterns of professional practice Appropriation of generic resources Use and exploitation of rhetorical strategies Patterns of interdiscursivity SOCIO-COGNITIVE PROCEDURES <ul style="list-style-type: none"> History, beliefs, goals of disciplinary culture, etc. Analysis of texts intertextually linked Analysis of other contributing genres Studies of relevant disciplinary cultures 	SOCIO-CRITICAL PERSPECTIVES <ul style="list-style-type: none"> (not applicable) SOCIO-CRITICAL PROCEDURES <ul style="list-style-type: none"> (not applicable)
Research Method Used: <i>Document review</i>	Research Method Used: (not applicable)

Figure 3.1: Research methods based on Bhatia's (2004) framework for discourse analysis and research procedures.

3.2.6 Data analysis and interpretation of findings

To analyse the large amount of texts (94 articles) from the research corpus, a systematic data analysis approach was adopted. The steps involved are illustrated in Figure 3.2.

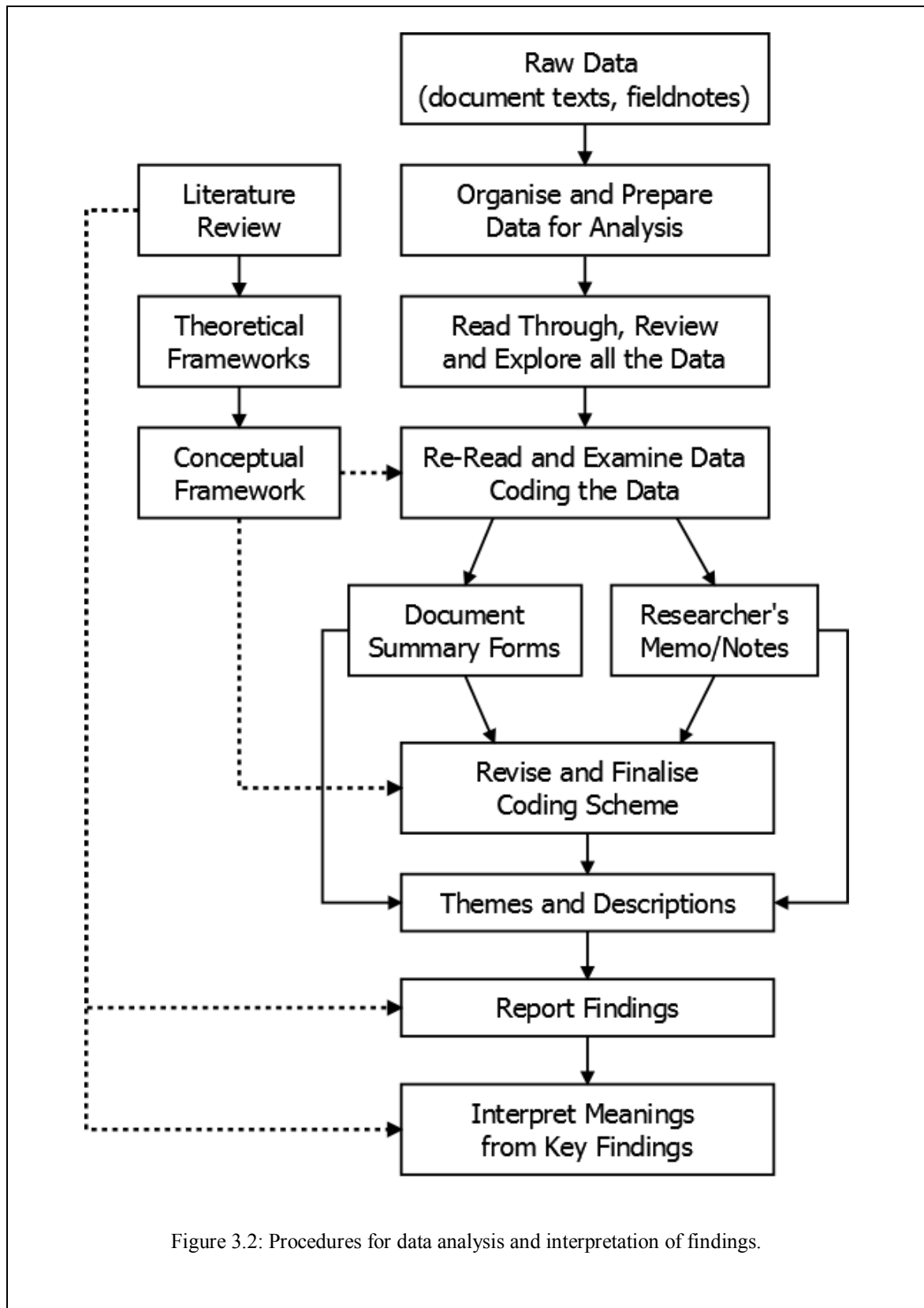


Figure 3.2: Procedures for data analysis and interpretation of findings.

The challenge of data analysis is to “make sense of large amounts of data, reduce the volume of information, [and] identify significant patterns” (Bloomberg & Volpe, 2008, p. 84) to derive themes from findings for interpretation and discussion. Thus, the following is a list that describes the systematic steps and procedures undertaken in this process.

1. Firstly, raw data from the research corpus was arranged and sorted according to the sources of information i.e. MN magazines, field notes (from observation) and the researcher’s personal journal. 4 of the 94 articles were typed out as these samples were thoroughly examined (see Table 3.2.). Templates for note-taking were drafted and data organisation tables for analysis were prepared to facilitate subsequent steps.
2. Then, careful readings were performed over all the data to obtain an overall meaning that gives a general sense and some feel for the storyline that enveloped during the process. General thoughts were recorded in the researcher’s journal, memos and margins alongside the data or texts.
3. A detailed analysis began with a reflection on the relationships of the process and the research questions. Relevant theoretical frameworks (for answering the research questions) were identified from the literature review to draw a comprehensive conceptual framework (see Table 3.4) to serve as the centrepiece for the entire analytical process.
4. The “winnowing process” (Seidman, 1998 and Creswell, 1998, as cited in Bloomberg & Volpe, 2008, p. 102) was carried out to reduce the bigger ideas in Step 2 into smaller and manageable chunks of information based on a coding system that reflects the conceptual framework and research questions of the study. Codes are unique identifiers that are assigned to the segments of data that are relevant based on pre-determined categories (see Table 3.5 and Table 3.6).

While examining the data, data summary forms (see Table 3.7) were used to collate and organise all information gleaned from the research corpus (MN texts) to represent the profile of each document (Bloomberg & Volpe, 2008, p. 101). Codes and the researcher's memos as well as notes were written at the designated columns within the document summary forms (see Table 3.7).

	Theoretical framework	Main literature reviews	Underpinning disciplines
A Conceptual Framework for the Analysis of Natural History Texts	Genre Theories and Concepts <ul style="list-style-type: none"> Genre sets Genre chains Genre networks Hybrid genres Systems of genres Genre colonies 	Bhatia (2004, 2008) Swales (1990, 2000)	Linguistics and Rhetoric
	Genre Analysis of Professional Discourse <ul style="list-style-type: none"> Move analysis Multi-dimensional multi-perspective discourse analysis, Generic integrity (disciplinary culture, professional practices) 	Bhatia (2004, 2008)	Linguistics and Rhetoric
	Principles of Interpretation <ul style="list-style-type: none"> Principle of 'RELATE' Principle of 'REVEAL' Principle of 'ART' Principle of 'WHOLE' Principle of 'PROVOKE' Principle of 'CHILDREN' 	Tilden (1957, 1977) Ham (2002) Beck & Cable (2002)	Heritage and Environmental Interpretation
	Interpretive Writing <ul style="list-style-type: none"> Combination of writing styles Tangibles, intangibles and universal concepts Strategies and techniques 	Leftridge (2006)	Environmental Communication and Literary Writing
Note: For a detailed theoretical grounding, please see the relevant literature review in Chapter 2.			

Table 3.4: A conceptual framework for data analysis and its relationships with multi-theoretical frameworks of various disciplines.

Research questions (RQ) and topics	Descriptive codes used in data summary form
RQ 1: Genres in natural history	Genre chain
RQ 1: Move analysis*	GENRE MIXING, GENRE EMBEDDING (Hybrid genres) [All individual moves defined in Chapter 4]* INTERPRETIVE (new genre colony)
RQ 2: Professional practices	RELATE, REVEAL, ART, WHOLE, PROVOKE, CHILDREN Teachable moments Tangibles, Intangibles, Universal concepts [Strategies and techniques of interpretive writing] Emergent genre (for emerging findings)
Note: * Codes used to identify individual moves are elaborated on in Chapter 4 and are applied only to specific texts that were coded as INTERPRETIVE at the first stage (4 were selected – see Table 3.2)	

Table 3.5: Coding used for data analysis (descriptive).

Code	Genre Type (to answer RQ 1)	Count
AD	Adventure writing	2
AN	Essays on animals	4
BI	Essays on birds	3
BR	Book reviews	4
CO	Essays on conservation	5
CPO	CSR posters	1
CSR	CSR news	3
EN	Editor's note	5
FI	Fiction writing	2
GA	Gadget reviews	1
HI	Historical writing	1
IS	Essays on insects/arachnid	5
LE	Letters to the editor	7
MI	Others/Miscellaneous	5
NE	Essays on nature excursions	6
NP	Essays on nature/geological phenomena	2
NW	Nature writing	1
OT	Essays on outdoor safety/tips	1
PH	Photos (Album)	2
PL	Essays on plants/trees/forests	2
PR	Essays on nature/conservation projects	9
RS	Essays in response to particular actions/accidents	3
TM	Essays related to tourism e.g. place, etc.	4
TN	Tribute notes	4
TR	Travel writing	2
TR/NE	(Overlapping genres)	1
AN/CO	(Overlapping genres)	1
AN/FI	(Overlapping genres)	1
CO/NP	(Overlapping genres)	1
NP/FI	(Overlapping genres)	1
NP/NE/RS	(Overlapping genres)	1
PL/CO	(Overlapping genres)	1
PL/NP	(Overlapping genres)	1
PL/NP/PR	(Overlapping genres)	1
TO/PL	(Overlapping genres)	1
Total samples in the research corpus		94
Codes in shaded rows represent main genres while the others contain overlapping types. Note: Genre types (coded) are derived from the different text types found in the corpus.		

Table 3.6: Coding used for data analysis (abbreviated).

Volume XX-X, Month Name YYYY MN Identifier: MN-YYYYMM						
Page	Title	Document type	Topic	Notes from Review	Associations	Remarks
X	XXX [GENRE MIXING] or [GENRE EMBEDDING] or [INTERPRETIVE]	(Codes from Table 3.6)	XXX	XXX (Researcher's notes – thoughts, insights, etc.)	XXX (Researcher's notes – other related topics)	(Codes from Table 3.5) (Researcher's memo – examples, ideas, strategies, etc.)
Keys: X = Information from MN, YYYY = Year value, MM = Month value, MN = Malaysian Naturalist						
Note: Please see Appendix B for the actual document summary forms used for data analysis.						

Table 3.7: A template of document summary form (for each MN issue) and locations for code assignment.

- The coding scheme was made flexible so it remained open to change throughout the entire analytic process. Data was examined back and forth between the document summary forms and the conceptual framework to draw forth patterns within and across documents in the research corpus. Codes were simultaneously collapsed, eliminated, refined or added (see Table 3.8) as new patterns emerged while tentative placements and notes were jotted down for the unexpected.

New Codes	Genre Type	Subsumed Initial Codes	Count
MAIN GENRES			
new_EN	Editor's note	EN	5
new_LE	Letters to the editor	LE	7
new_PH	Photos (Album)	PH	2
new_RE	Reviews	BR, GA	5
new_AT	Articles on travel & tourism	NE, OT, TM	11
new_AN	Articles on nature	AN, BI, IS, NP, PL	16
new_AC	Articles on conservation	CO, PR	14
new_AP	Articles about people	TN	4
new_AE	Articles on news and events	CSR, RS	6
new_PO	Posters	CPO	1
new_OT	Others	MI	5
MAIN WRITING STYLES (SUB-GENRES)			
new_WA	Adventure writing	AD	2
new_WF	Fictional writing	FI	2
new_WH	Historical writing	HI	1
new_WN	Nature writing	NW	1
new_WT	Travel writing	TW	2

SUB-GENRES SUBSUMED WITHIN THE MAIN GENRES			
-	(Overlapping genres)	TR/NE, AN/CO, AN/FI, CO/NP, NP/FI, NP/NE/RS, PL/CO, PL/NP, PL/NP/PR, TO/PL	10
Total sample in the research corpus			94
Note: Articles on nature and conservation (30 out of 94) seemed to be the dominant genres as expected because they represent MNS mission to promote the appreciation of Malaysia's natural heritage – hence, the research corpus fits the purpose of the study and addresses its research questions.			

Table 3.8: Finalised coding scheme after several reviews.

6. In seeking answers to the second research question, a detailed and thorough analysis was further conducted for items labelled as “INTERPRETIVE” in the document summary forms. Four selected articles (see Table 3.2) which texts were prepared and typed earlier were coded separately for two times: (a) for move analysis – different codes were used and elaborated in Chapter 4 (b) for analysis of the underlying professional practices – codes in Table 3.5 were used. The respective codes with the researcher's memos and notes were again written on a separate column adjacent to the texts in which they represent. See Table 3.9 for an illustration of the procedure.

Interpretive Writing (Topic)	
XXX (Title) XXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX	(Codes representing each move in move analysis – see Chapter 4) OR (in separate templates) (Codes from Table 3.5)
Keys: X = Information from the 4 selected articles which were coded INTERPRETIVE earlier	
Note: Please see Chapter 4 and Appendix C for the actual templates used for data analysis.	

Table 3.9: A template for move analysis (Chapter 4) and further analysis of the selected articles in MN.

7. All findings drawn from Step 5 and Step 6 were collated, described and analysed by looking at the patterns that were shown or emerged from them. Themes were identified based on the conceptual framework and key findings were discussed in tandem to draw meanings by pulling everything together: (a) the findings (b) research questions (c) relation to conceptual framework (d) relation to literature

(e) the researcher's assumptions. Selected excerpts (segments of texts) were extracted to report findings and discussion.

3.3 ETHICAL CONSIDERATIONS

The researcher acknowledged the need for an ethical research design and the importance of moral issues in minimising the potential harm to those involved (Bloomberg & Volpe, p. 76). Fortunately, such considerations were not necessarily required in this research because the data (documents) are publicly available and they belong to the researcher who has been an MNS member for a long time.

A prior consent and agreement had been sought from peers who have helped to review and comment on the findings drawn during the peer debriefing sessions (as explained later). Such reviews and feedback exchange are meant to benefit peers as well when they are researching on similar topics.

3.4 ISSUES OF TRUSTWORTHINESS

Issues of validity, reliability and generalizability have always been the major concerns for a good quality research. Qualitative validity refers to the accuracy of findings and whether the research has clearly reflected on the world being described, while qualitative reliability often relates to the compatibility of findings/observations made by two or more researchers who research the same topics (Bloomberg & Volpe, 2008, p. 75-76; Gibbs, 2007, as cited in Creswell, 2009, p. 190). On the other hand, generalizability means findings can be generalized to specific or new cases outside of those under study (Gibbs, 2007, as cited in *ibid.*, p. 193) but this is not the principal aim in qualitative research. To tackle these issues, several strategies were employed to enhance the trustworthiness of this research through parallel 'credibility' (validity), 'dependability' (reliability) and 'transferability' (generalizability) (Lincoln & Cuba,

1985 and 1998, as cited in Bloomberg & Volpe, 2008, p. 77) as well as ‘particularity’ (generalizability) (Greene & Caracelli, 1997, as cited in Creswell, 2009, p. 193).

3.4.1 Addressing credibility

Evidence in support of credibility for this research is listed in the following:

- The researcher wishes to clarify up front on the bias that may be present in the study due to personal background and membership affiliations (see Table 3.10). Subjective perceptions may have been drawn arising from the researcher’s close relationships with the data, discourse community as well as being a participant in the professions that were being investigated.

An overview of the researcher’s background and membership related to the topic under studied	
a)	A member of MNS since 2004, with at least 8 years of involvement with nature and conservation activities – also a subscriber and a reader of MN
b)	Submitted an article about nature (Yee, 2006) to the MNS newsletter
c)	Audited the “Genre Analysis” course (Jan – May 2011) lectured by Dr. Kais Amir, UM
d)	Attended a 2-week Nature Guide course (with examination) organised by the Ministry of Tourism, MNS and PERHILITAN at Kuala Selangor Nature Park (Jun – Jul 2010)
e)	A student member of the International Environmental Communication Association (IECA) since Dec 2011
f)	A practitioner in nature guiding (certified and licensed Malaysian nature guide (Feb 2011-Feb 2012) and a regular volunteer for many nature/conservation activities

Table 3.10: Researcher's background and membership affiliations.

- A theoretical triangulation (see Table 3.4), “the involvement of more than one theoretical stance” (Angouri, 2010, p. 34) was used to represent the interdisciplinary nature of the topic being investigated to lead to a better understanding of genres (research question) in the complex environment of the professions related to natural history.
- A rich and thick description was used to convey the findings that give a holistic overview of “what is it that’s going on” (Goffman, 1967, as cited in Candlin, 2011) in the professional domain of natural history and its counterparts. Both textual and socio-cognitive perspectives were examined thoroughly to represent the complexity and depth in research findings.

- Discrepant and unexpected findings were presented in the analysis (see move analysis in Chapter 4) where the researcher has given possible reasons and explanations to justify and discuss emerging patterns.
- Two ‘peer debriefing’ (Bloomberg & Volpe, 2008, p. 77; Creswell, 2009, p. 192) sessions were conducted with four colleagues/peers (paired up for each session) to help examine findings to enhance the accuracy of the researcher’s accounts (see Table 3.11). This involves discussions between the researcher and ‘peer-debriefers’ (Cresswell, 2009, p. 192) where questions were being asked during the reviews.

Date/Time	Topic	Feedback	Follow-up
11 May 2012 (3pm – 5pm) 2 peer-debriefers	Move analysis of interpretative genres (4 selected text samples are used)	<ul style="list-style-type: none"> ▪ Encouraging ▪ Literary genres were mentioned and referred during discussions ▪ Suggestions on the naming of moves were given 	<ul style="list-style-type: none"> ▪ A thank you note ▪ Adopted some recommended names for specific moves
21 May 2012 (10am – 1pm) 2 peer-debriefers	Introduction of a new genre colony called ‘interpretative genres’ (a detailed generic description is given) Professional practices in natural history texts (excerpts from MN are used)	<ul style="list-style-type: none"> ▪ Constructive ▪ Graphics should be part of the analysis ▪ Socio-cognitive perspectives did not include audience reception analysis ▪ ‘Interpretive’ genres could be just a writing strategy/technique 	<ul style="list-style-type: none"> ▪ A thank you note ▪ Detailed explanation and justification on (a) the photo genre (b) the socio-cognitive perspectives (c) the rationale and viability of interpretive genres
Note: Please see Appendix D for sample questions used to probe peer-debriefers for insights on findings.			

Table 3.11: Peer debriefing sessions conducted to enhance research credibility.

- Some preliminary research findings were disseminated to classmates and colleagues at the university level. A pilot sharing session and a conference presentation were conducted to gather insights and feedback from the audience (see Table 3.12). Both sessions were fruitful and useful to the researcher because the feedback received enhanced the understanding of research findings from the perspective of the audience.

Date	Presentation setting	Title of presentation	Feedback obtained
6 Apr 2011	Genre analysis class of Dr. Kais (during class presentation week)	Interpretive Genres in the Discourse of Natural History: Real World and Social Cognitive Perspectives	<ul style="list-style-type: none"> ▪ Encouraging ▪ Ideas are fresh and novel
8 Dec 2011	3 rd Faculty of Languages and Linguistics Postgraduate Conference	Beyond Mere Descriptions in Natural History: A Revelation from 'Interpretive Genres'	<ul style="list-style-type: none"> ▪ Encouraging ▪ Genres are dynamic and always changing ▪ An interesting discourse being looked at ▪ Ecolinguistics and ecocomposition can be explored

Table 3.12: Sharing of preliminary research findings with colleagues via presentations.

3.4.2 Addressing dependability

Dependability of this research can be evaluated based on the rigorous processes and procedures that have been undertaken in data collection and data analysis. The following are some steps taken by the researcher to enhance dependability:

- A detailed and thorough explanation of how data was collected and analysed (as explained earlier) is provided by the researcher.
- The coding process has been systematically examined and refined according to the conceptual framework and research questions (as explained earlier) to prevent drifting in the definition of codes (Creswell, 2009, p. 190).

3.4.3 Addressing transferability and particularity

As this is a purely qualitative research, the researcher does not expect to generalise findings to all other settings. Instead, the aim of the study is to provide a thick description that gives a holistic and realistic picture of the topics examined according to the research questions. Provision of rich descriptions will most likely be useful and practical to others carrying out research in different contexts. An in-depth understanding gained from detailed information on the topic studied can also “offer an element of shared experience” (Bloomberg & Volpe, 2008, p. 78) to the readers. The value of this

research hence lies in “the particular description and themes” (Creswell, 2009, p. 193) developed in the context of natural history.

3.5 LIMITATIONS OF THE STUDY

The following are some shortcomings of this research that had been anticipated:

- Researcher’s bias is inevitable because this is a purely qualitative research
- Graphics (or multi-modal forms) were not included in data analysis although they formed part of the texts and they are especially relevant for natural history topics – due to time constraint, this concern has been classified beyond the scope of the research. However, graphics are assumed to be straightforward and usually illustrates the natural elements being talked about in texts; hence graphics may function for identification purposes only.
- Spoken genres (talks, conversations, etc.) were not taken into consideration – but these have been considered in the overview representation of genres in natural history
- Interviews have been neglected as a research method in the study although they are usually the main tool in qualitative analysis – this was due to the overwhelming findings gathered from the data in the research corpus that interviews have not been included in the study; nevertheless, this method will be useful for future research.

3.6 SUMMARY

In summary, this chapter has provided a detailed description of the research methodology adopted for this study. A qualitative research is employed to explore the world of genres in natural history and the underpinning disciplinary culture and professional practices. The research corpus contains data that comprise 94 articles/texts (of different genres) gathered from the recent 5 issues of the MN. Two data collection methods were employed: (a) document review (b) observation. The data was reviewed and analysed based on a conceptual framework grounded on theoretical frameworks of related disciplines. Findings were gathered, interpreted and discussed with reference to relevant literature. Issues of credibility, dependability and transferability (also particularity) have been addressed by the researcher including some shortcomings of the research. Lastly, it is hope that this research will be of value to the practitioners in natural history and researchers studying similar topics.

CHAPTER 4: ANALYTICAL FINDINGS AND DISCUSSION

4.1 INTRODUCTION

The purpose of this exploratory research is to examine the genres that are found in the world of natural history from a socio-cognitive perspective. The study is based on pre-defined research questions mentioned in Chapter 1. These questions will be answered by findings presented in this chapter followed by relevant interpretations and analytical discussions.

Relationships between genres, disciplines and registers in natural history

Natural history requires an interdisciplinary inquiry to explain the interrelationship between registers, genres and disciplines which are found within. Interconnections between these concepts are shown in Figure 4.1.

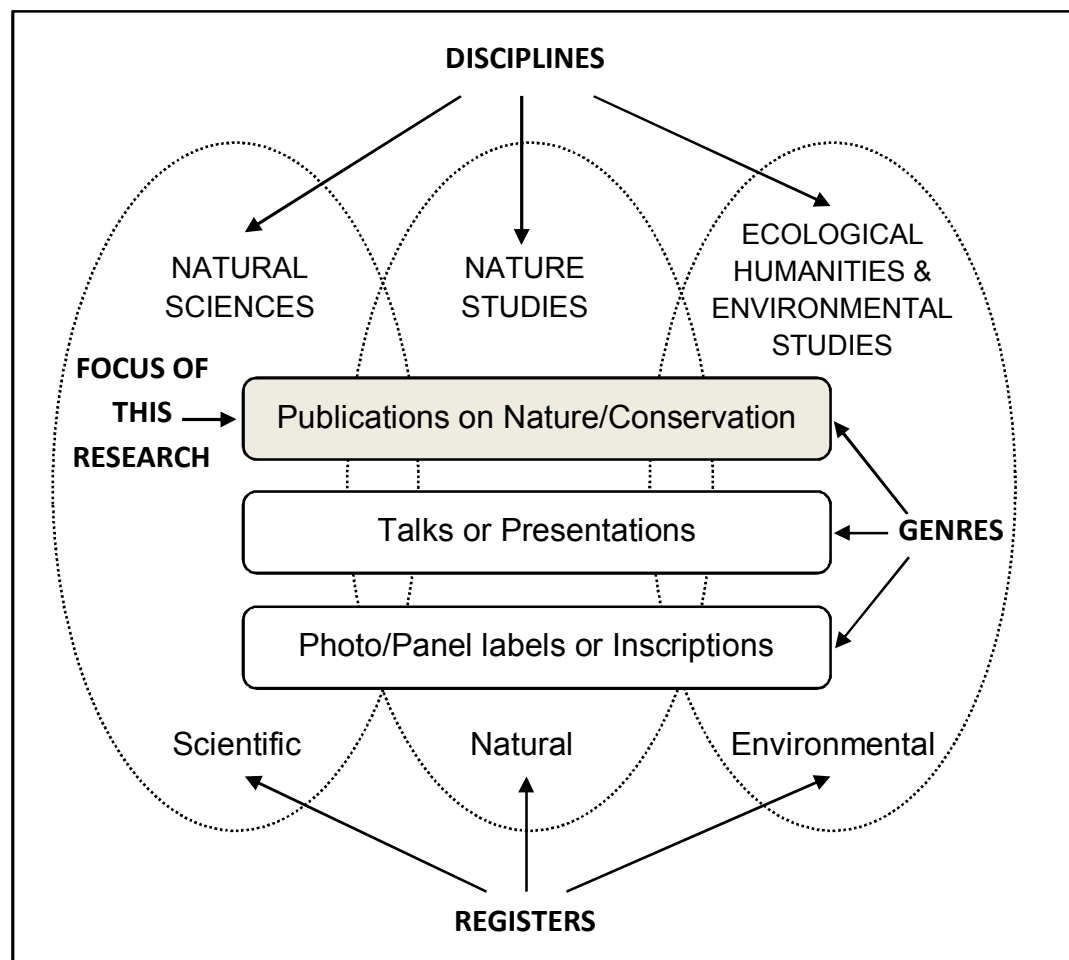


Figure 4.1: Registers, genres and disciplines in natural history.

By applying Bhatia's (2004, p. 30) illustration of such relationships, three basic categories of genre are found – publications (written), talks/presentations (spoken) and labels/inscriptions (multi-modal) about nature or conservation. The first instance is explored in depth in this research.

Disciplines that are dominant in the field do not just include an established field of inquiry (Samraj, 2005) such as the Natural Sciences (zoology, botany and biosphere/the Earth), but also comprise significant sub-discipline like nature studies (biology, geology) and contemporary interdisciplinary disciplines such as Ecological or Environmental Humanities (Rose & Robin, 2004; Kaza, 2005, p. 4; Ecological Humanities, n.d.) and environmental studies (Aldelson et al., 2008, p. 3-4) (linguistics, communication studies, etc.). Therefore, it is important to take the existing context and diversity of genres in natural history into account in order to determine its relevant interdisciplinary boundaries. Figure 4.1 shows how “genres cut across disciplines” (Bhatia, 2004, p. 30) through interactions within and across disciplinary cultures by means of standardised discourse forms (Silver, 2006, p. 34), represented by genre categories as mentioned earlier. These genres are associated with registers (standard or typical language configurations) that are specific to a particular disciplinary content (Hasan, 1973, as cited in Bhatia, 2004) – in this case, registers such as scientific, natural, environmental or any combination thereof can be found (see Table 4.1).

	Discipline	Register	Specialised lexis found in genres
Genres in Natural History	Natural Sciences (zoology, botany, studies on Earth)	Scientific	<i>genus -species</i> name pairs e.g., <i>Homo sapiens</i> , <i>coleoptera</i> (beetle), <i>gymnosperms</i> (seed-producing plants), <i>angiosperms</i> (flowering plants), <i>pollinators</i> , <i>gastropods</i> (snails or slugs), <i>biosphere</i> (ecosystems and life on Earth), etc.
	Nature Studies (biology, geology)	Natural	<i>antennae</i> , <i>dorsal</i> (the back side), <i>ventral</i> (the front side), <i>rupture</i> (abdominal hernia), <i>vivipary</i> (reproduction via buds), <i>copulation</i> (sexual intercourse), <i>pudding</i> , <i>invasive species/aliens</i> , <i>natives</i> , <i>endemic</i> , <i>sedimentation</i> , <i>decomposition</i> , <i>global warming</i> , <i>climate change</i> , etc.
	Ecological / Environmental Humanities &	Environmental	<i>conservation</i> , <i>ecology</i> , <i>sustainability</i> , <i>biodiversity</i> , <i>carbon footprint</i> , <i>endangered species</i> , <i>ecotourism</i> , <i>artisanal</i> (traditional) fisheries, <i>indigenous</i>

Environmental Studies (linguistics, communication studies, society, etc.)	community, <i>wildlife trafficking</i> , <i>viaducts/eco-bridge</i> , <i>CSR</i> (corporate sustainable responsibility) initiatives, <i>human-animal conflict</i> , etc.
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Table 4.1: Specialised lexis of particular disciplines/registers in natural history.

Lexical items shown in Table 4.1 demonstrate the interrelationships between discourse, registers and disciplines. In Natural Sciences, lexis tends to take the form of binomials especially in scientific expressions of living beings. A mixture of Greek and Latin words or a combination of both is a norm in *scientific register* (e.g. *Homo sapiens* are Latin words, literally means ‘human/man’ and ‘wise’). Scientific categories or taxonomies of flora, fauna or on Earth seem to prosper as well e.g., *angiosperms*, *coleopteran* and *biosphere*. Genres also include elements of nature of *natural registers* that are usually concerned with naming of anatomy (e.g. *dorsal* and *rupture*), behaviours in the natural world (e.g., *vivipary* and *pudding*), state of beings (e.g. *aliens* or *natives*) and descriptions of natural processes (e.g., *sedimentation* and *decomposition*) as well as contemporary concepts (e.g., *global warming* and *climate change*) that are more comprehensible to the laymen, in contrast to scientific registers. Meanwhile, lexemes of *environmental registers* are pervasive in natural history discourse (e.g., *conservation*, *ecotourism*, *indigenous* community and *CSR*) because multiple perspectives from the Humanities and Social Sciences have been included in genre development to address the ecological issues between humans and the natural environment.

It is important to understand that some specialised lexis may overlap between scientific, natural and environmental registers. Genres in natural history provide the means to interconnect them in harmony across the Sciences, Nature- and Environmental-related disciplines. This configuration generates variations of genres that share common disciplinary concerns, yet differ in their socio-cognitive realities that

realise specific communicative purposes, and provides the basis for genre change and development (Berkenkotter & Huckin, 1995; Bhatia, 2002a; 2004).

4.2 GENRES IN NATURAL HISTORY

In the sub-sections that follow, we will explore the description and identification of genres in natural history at various levels of generalisations, and classify them systematically via genre concepts and theoretical constructs.

4.2.1 Genre sets in natural history

Several participant groups have been identified in order to describe ‘genre sets’ (Devitt, 1991) that are found in natural history (see Table 4.2).

Group	Participant	Description
Editorial team	Editors, reviewers, authors, members of the board, etc.	Owners and producers of genres with authority to publish and mostly experts and experienced discourse members
Laymen (the public)	Magazine readers, visitors, MNS members, etc.	Mostly consumers of the genres produced and information users; Sometimes, they also contribute to a publication e.g., MNS members
Professionals	Naturalists, conservationists, environmentalists, scientists, nature guides, environmental interpreters / communicators, etc.	Consist of mainly the discourse community of natural history – keen enthusiasts in the field and those who conduct research and publication to expand and promote studies of nature, environment and Natural Sciences
Institutions	NGOs, corporate companies, government agencies, publishers, etc.	Governing bodies who contribute to specific missions (mostly in the form of services/policies) that are pro-environment and advocates environmental movement/campaigns

Table 4.2: Genre participants in the world of natural history.

Individual participants in each group produce and consume texts as distinct genres that contain typical patterns of natural, scientific or environmental information. Genre sets materialise when genres are grouped together according to the participation from members of the professional (including the editorial) community, laymen and institutional entities. While Devitt (1991) describes the genre sets of tax accountants

based on their duties, similar cases on interactions between genres and participation have been analysed within the context of natural history (see Table 4.3).

Group	Participant		Genre set
Editorial team	Editor / Author	→	Editor's note, newsletters, articles, bulletins
	Reviewer	→	Evaluation notes and reviews
Laymen (the public)	MNS member	→	Essays in newsletters, articles and bulletins, contribution of photos
	Magazine reader	→	Letters to the editor
Professionals	Naturalist / Conservationist / Environmentalist / Scientist	→	Reports (of nature/conservation projects), journal articles, field guides, guided walks, nature/environmental talks, essays in publication, encyclopaedia
	Nature guide / Interpreter / Communicator / Curator / Forest ranger / Park officer	→	Guided walks, nature/environmental talks, safety briefings, introductory statements, essays in publication
Institutions	NGO	→	Brochures, workshops, websites, maps, posters, photos, videos
	Corporate company	→	CSR posters, CSR websites, environmental reports, sustainability annual reports, videos
	Government agency / Nature centre	→	Posters, labels and signage, information boards and panels, brochures, workshops, websites, maps, posters, photos, videos
Legend/Key	→ produces a genre set of distinct individual genres in natural history		

Table 4.3: Genre sets in natural history based on degree of participation of discourse members.

Some genres (of specific genre sets) in Table 4.3 are derived from the corpus of this research including the editor's notes, reviews, letters, article essays relevant in natural history and posters. Meanwhile, other spoken genres (e.g., guided walks and environmental/nature talks), written forms (e.g., journal articles, field guides, labels, signage and information boards) and multi-modal forms (e.g., videos, photos and websites) are identified through observation and by the researcher's own experience.

Individual genres such as the editor's notes, letters to the editor, essays and reports, photos and posters are intertextually linked (Bhatia, 2004) to form higher level genres such as magazines, newsletters and other publications. Genre sets in natural history may represent one part of the professional output (Bazerman, 1994) that are either explicit (see generic texts in Table 4.3) or implicit (prepared drafts, outlines and notes e.g., field notes and sketches of nature) (Tardy, 2003), and actions and interactions

(Miller, 1994) found in the public, professional and institutional contexts. These exemplars are central to the understanding of genre sets in natural history.

4.2.2 Systems of genres in natural history

The interactions of interrelated genre sets produced by the participation of all members of the discourse community form the ‘systems of genres’ in natural history (Bazerman, 1994). The systems of genres represent a full and complete set of discursive forms, interactions and social relations invoked by all the participants in the course of their professional routines within the context of natural history. Similar to past studies conducted by Devitt (1991) and Bhatia (2002a, 2004), the systems of genres in natural history in this research consists of generic forms such as nature- or conservation-related essay articles, newsletters, letters and reports as well as nature/environmental talks, guided walks, labels, panels, posters, videos, websites, etc. (see Figure 4.2).

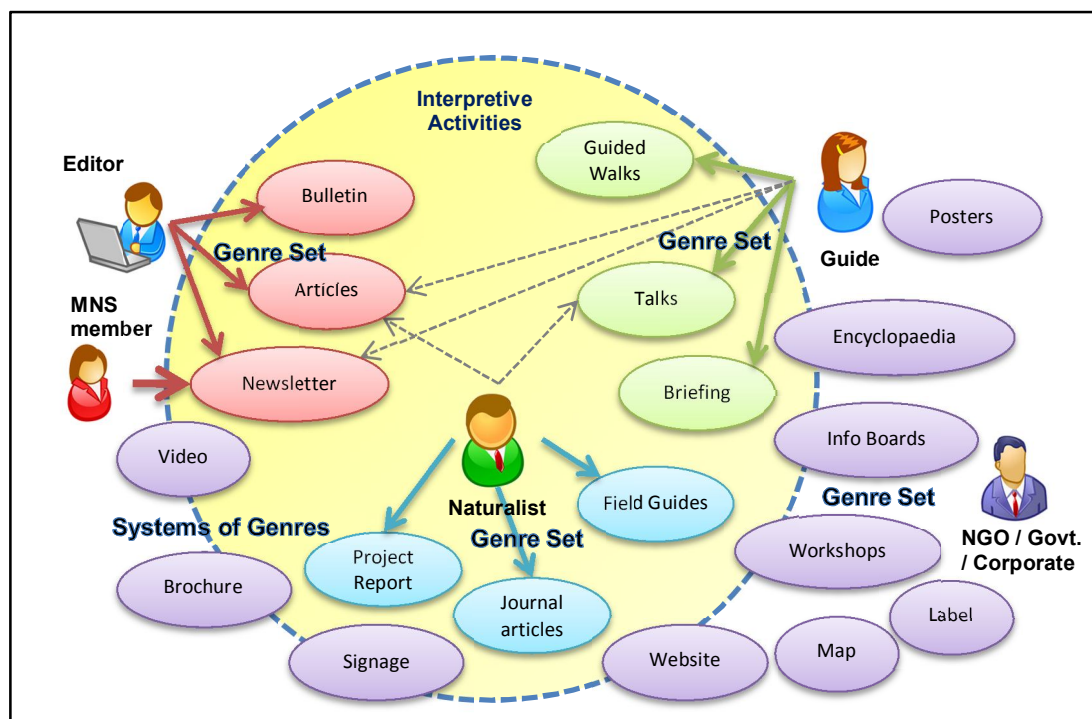


Figure 4.2: Systems of genres in natural history.

In the diagram, the full systems of genres are made up of genre set 1 (of an editor/MNS member), genre set 2 (of a nature guide/interpreter), genre set 3 (of a naturalist/scientist)

and so on including genre set n (of other parties such as NGOs, governmental agencies or corporate companies). Each participant produces written/spoken genres and the dotted lines represent their intertextual relationships and interactions within the system which involves professional activities that are ‘interpretive’ by nature within the context of natural history.

4.2.3 Malaysian Naturalist: Genre networks in natural history

According to Swales (2004), a genre network can be seen as the aggregate of genres in a platform of a particular context. Hence, we will examine two different kinds of genre networks in natural history based on (a) typical categories and (b) writing styles found in the corpus of Malaysian Naturalist (henceforth MN).

4.2.3.1 A network of genre categories

In MN, genres of different types are interconnected in a hierarchy of categories such as the editor’s notes, letters to the editor, photos, reviews, posters and essay articles (see Figure 4.3).

The last category i.e. essay articles are the main contents in the magazine. These essays are grouped according to themes across overlapping disciplinary genres (Bhatia, 2004), for example, travel and tourism (tourism studies, geography and economics in Social Sciences), nature (in Natural Sciences and nature studies), and conservation, people and news/events (in Arts, Ecological Humanities and environmental studies). Genres within this category, including the rest, can be referred to as ‘open genres’ (Swales & Feak, 2000; Swales, 2004) which are formal and they are easily visible within MN. Genres such as the editor’s note, letters, photos, posters and reviews play a complementary role to the essay articles to ensure totality within the genre network of categories.

Two sub-genres (as indicated by * in Figure 4.3) i.e. gadget reviews and tribute notes have emerged from this research. These findings suggest that genres are ‘dynamic’ (Berkenkotter & Huckin, 1995; Swales, 1990) and they continue to expand and evolve within their networks to meet contemporary interests (i.e. evaluation of popular tools/gadgets related to nature) and to reflect conventional disciplinary culture of natural history (i.e. acknowledgment and respect for a person’s contribution of knowledge/expertise to the community).

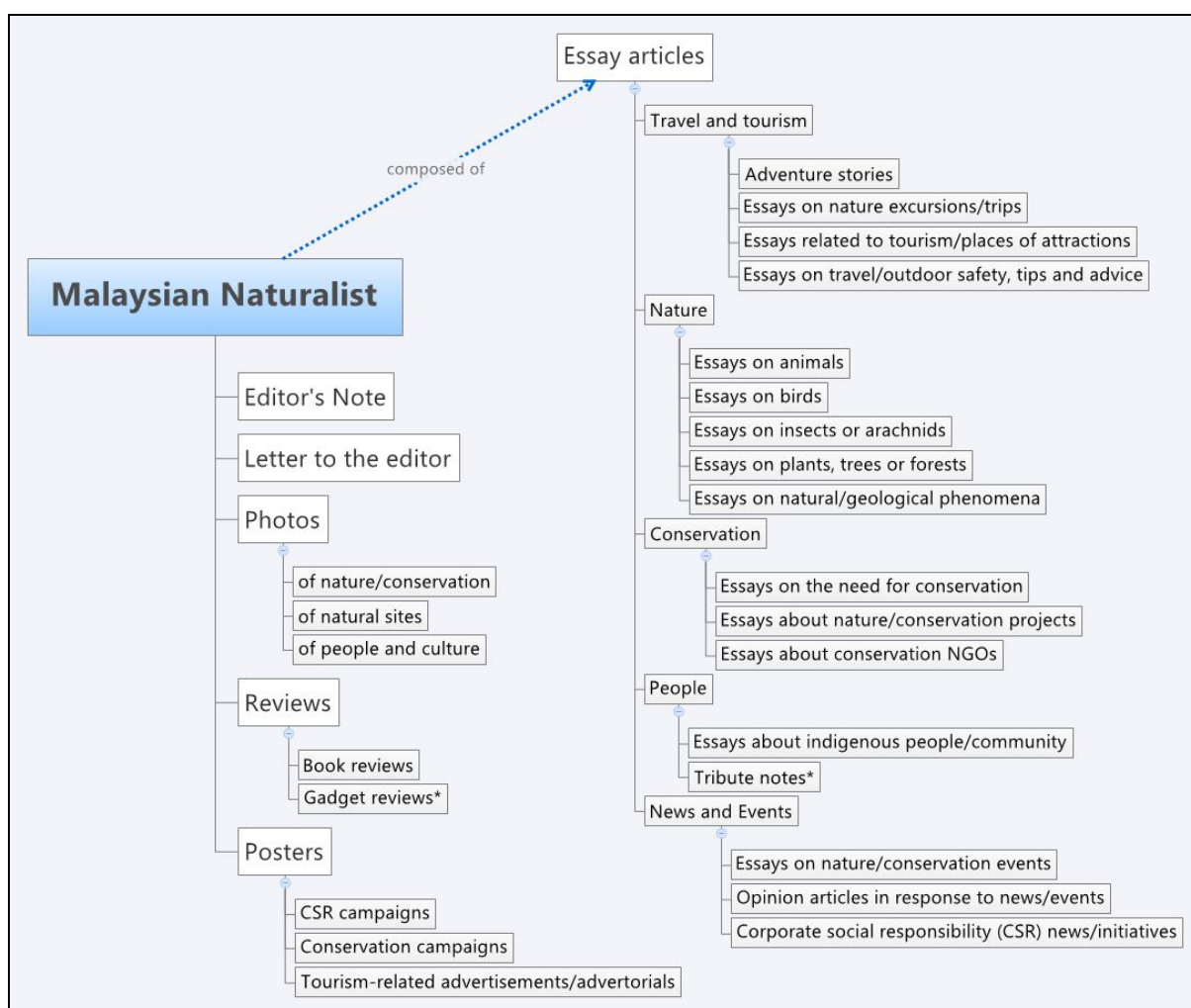


Figure 4.3: A genre network of categories in natural history.

4.2.3.2 A network of genres based on writing styles

We now turn to a different genre network that is constructed based on the writing styles that have emerged within MN (see Figure 4.4). By default, nature-, science- and scientific-writing are pertinent in natural history. Other forms of writing such as

informational-, historical-, biographical-, creative-, fictional-, adventure- and travel-writing have been seen amongst genre categories in Figure 4.3.



Figure 4.4: A genre network of writing styles in natural history.

Genres of writing styles establish connections and inter-textual relationships between themselves through literary (descriptive, narrative, informative) and rhetorical (argumentative, persuasive, evaluative) devices that are present in their structures. They form a network of supporting genres to complement open/formal genres (Swales & Feak, 2000; Swales, 2004, Paltridge, 2006) in Figure 4.3. For example, an essay article on indigenous people in MN (1) encapsulates occluded/supporting genres of informational writing and promotional writing within its informative and persuasive structure.

(1) This documentary aims to explore the implications of physical transformation to the landscape as well as the intrusion of government agencies, prospectors and other non-

indigenous people to the nomadic communities in Belum Temenggor **[Informative]**... The exhibition will be held at MNS' Gerik Conservation Resource Centre (GCRC) in Gerik, Perak from 13th April 2012. This month long exhibition will feature a series of workshops ... For more details, please contact ... **[Persuasive]**

(Kamal Solhaimi Fadzil, Malaysian Naturalist [March 2012],
'Nomads in the Belum Temengor Rainforest', p. 42-44)

Excerpt 4.1: Informational and promotional writing in an article about indigenous people.

Within MN's genre network of writing styles, a new form of genre (as indicated by * in Figure 4.4) known as interpretive writing (Leftridge, 2006) is observed. It combines several writing styles to generate provocation and emotional connections within its rhetorical structures. Details of interpretive writing will be explained later.

4.2.4 Malaysian Naturalist: Genre chains in natural history

The ordering or chronological structure of specific genres in natural history based on MN is a difficult task because the network system is limited and a wider 'systems of genres' is not being considered in this research. However, a few chains of different sub-genres can be implicated from the corpus of MN. These genre chains maybe shorter but they yield interesting findings that show how different sub-genres are related to one another (Paltridge, 2006; Cheng & Kong, 2009) in the world of natural history.

4.2.4.1 Genre chains triggered by specific events

Genre chain 1: (An event) → Cover page → Editor's note → Essays → Photos →

Editor's note (next issue)

Genre chain 2: (An event) → News article → Opinion article

(2) **[Cover Photo]**: A tall rainforest tree in a green forest background]

(MNS, Malaysian Naturalist [March 2011], 'Malaysia's Forests in Pictures', Cover page)

(3) We're losing our **natural paradise** ... **Our forests** ... and it's high time we celebrated this precious heritage ... invite you to embark on an incredible journey in this issue, into our

beautiful “Forests of Malaysia” photo feature ... Discover how montane forests ... stand right next to Asia’s tallest tree ... with a host of forest safety tips ...

(Shakila Rajendra, Malaysian Naturalist [March 2011], “Editor’s note”, p. 5)

- (4) PROTECT THE PLANET’s “LUNGS” ... The year 2011 has been declared the International Year of Forests ... Forests once cover half the earth’s landmass. Now only one tenth remains ... regulates the air we breathe ... Malaysians are still blessed with widespread forests ...

(Datin Nadzriyah Jaafar, Malaysian Naturalist [March 2011], “Editor’s note”, p. 5)

- (5) Towering at 88.32 m, this tree has been proclaimed the tallest in the tropical world ...

(Chey, Malaysian Naturalist [March 2011], ‘FOUND! The Tallest Tree in the Tropics’, p. 14-15)

- (6) Every year several people get lost while taking part in outdoor activities, we give you some tips on how to stay safe and on the right track while in the forest ...

(Asheigh Seow, Malaysian Naturalist [March 2011], ‘ONE DID NOT COME HOME’, p. 24-27)

- (7) Forests have important roles in protecting the global and local environment. We take a look at the montane forests ... reducing the harmful effects of climate change.

(Jeyanny & Lim, Malaysian Naturalist [March 2011], ‘Tropical Montane Forest Soils & Carbon Fixation’, p. 32-35)

- (8) We celebrate the Year of the Forests by presenting you with facades of Malaysia’s beautiful and diverse green landscapes ... [Followed by snapshots/photos of forests]

(MNS Conservation Division, Malaysian Naturalist [March 2011], ‘FORESTS OF MALAYSIA’, p. 40-45)

- (9) Also don’t forget that 2011 is dedicated to our forests and as we reach the middle mark of the year, do member to join hands with us and sign for Temenggor on ...

(Shakila Rajendra, Malaysian Naturalist [June 2011], “Editor’s note”, p. 5)

- (10) The order to raid Saleng Zoo and rescue the animals came from the Natural Resources and Environment Ministry after public complaints against the zoo were found to be true.

(The Star, 23 June 2011, ‘Complaints led to raid’)

- (11) The World Society for the Protection of Animals (WSPA) has applauded the wildlife department’s move to close the controversial Saleng Zoo ... further enforcement against other errant zoos.

(The Star, 24 June 2011, ‘WSPA lauds closure of Saleng Zoo’)

- (12) Shenaaz Khan, President of the Malaysian Animal Welfare Society shares her thoughts on the reactions on the closing down of the controversial Saleng Zoo in Johor.

(Sheenaz Khan, Malaysian Naturalist [September 2011], ‘Just Closure’, p.36-37)

Excerpt 4.2: Examples of genre chains triggered by events.

A typical example of genre chain triggered when the United Nations general assembly announced Year 2011 as the ‘International Year of Forests’ is illustrated in Excerpt 4.2. The signatory event influenced the construction of genres in MN for the first quarter of the year with a *cover page* depicting the forest (2) and subsequent texts in the *editor’s notes* (3 and 4), followed by various *essay articles* on trees/forests (5 and 7) and outdoor safety in the forest (6), as well as a collection of forest *photos* (8) with captions. The chain of genres does not end here but is continued across MN issues such as the event reminder in *editor’s note* (9). In these examples, all links in the chain (in the form of sub-genres) such as the editor’s notes, essay articles and photos are activated to achieve the effects received from the signatory event (the International Year of the Forests) that has successfully triggered a sequence in the contents of MN. Thus, the existence of genre chain allows readers to gain relevant information and knowledge pertaining to a particular event.

Another example that illustrates a genre chain is when an event triggers breaking news and then invites opinion articles in response to it. For example, the raid and closure of the controversial Saleng Zoo created a chain of news in press (10 and 11) and in the next issue of MN following the event, an opinion article (12) that relates to animal welfare has continued the chain to achieve further attention on the same matter at the end of the sequence.

4.2.4.2 Genre chains triggered by publication practices

Genre chain 3: (Sub-genres of a past MN issue) → Erratum

(13) Page 1: The frog image was photographed by Sanjitpaal Singh ... Page 32: The hornbill on the upper left is a Wrinkled Hornbill and not a Plain-Pouched Hornbill.

(Editor, Malaysian Naturalist [March 2009], ‘erratum from previous issue’, p.7)

(14) [Photo: Waterweeds] The following photograph from last issues ‘Ecological Implications from the Naturalisation of Noxious Cabomba Waterweeds in Malaysia’ was omitted due to word space. In this article, it was crucial to point out that ...

(Editor, Malaysian Naturalist [March 2010], ‘erratum from previous issue’, p. 7)
(15)[Photo: Peafowl] The <i>Malaysian Naturalist</i> would like to clarify that the following photograph in the last issue (Sept 2011) ... titled <i>Dancing For a Mate</i> , ... the image credit belongs to Fletcher & Baylis. We would like to apologise for any inconvenience caused.
(Editor, Malaysian Naturalist [December 2011], ‘erratum from previous issue’, p. 7)

Excerpt 4.3: Examples of genre chains triggered by publication practices.

In Excerpt 4.3, we can clearly see how a simple genre chain can be constructed for error corrections deemed necessary in MN publication. Generally, the genre called *erratum* is a sub-genre that follows photo wrongly published or credited in the previous issue (13, 14 and 15) so appropriate errors can be rectified. This practice is crucial in publication especially accurate information (13 and 14) gives credibility to MN. Besides correcting mistakes in the previous issue, erratum also serves to append additional resources such as an additional photograph (14) that refers to previous essays/articles, and to establish good courtesy with the readers with an apologetic message (15) when it is necessary. Although this genre chain is irregular in MN, it embeds an important pragmatic function that is crucial in publication.

4.2.5 Malaysian Naturalist: Genre colonies in natural history

In genre networks and systems of genres, we have seen that groups of closely related genres exist within and across disciplinary and professional boundaries. These groups are genre colonies that pool academic, professional and public genres together to serve similar communicative purposes or intent. In Table 4.4, genre categories in MN are tabulated according to the four different classes of genre colonies (Bhatia, 2004; 2008b).

Genre colony	Primary member	Secondary member
Promotional genres	<ul style="list-style-type: none"> Essays related to tourism Tourism advertisements CSR news/initiatives Campaign posters 	<ul style="list-style-type: none"> <i>Photos</i> Essays on outdoor safety <i>Reviews of books/gadgets</i>

Introductions	<ul style="list-style-type: none"> ▪ <i>Editor's notes</i> ▪ Article introductions (sub-genres) ▪ Acknowledgments within articles (sub-genres) 	<ul style="list-style-type: none"> ▪ <i>Articles on travel & tourism</i> ▪ <i>Articles on nature</i> ▪ <i>Articles on conservation</i> ▪ <i>Articles about people</i>
Reporting genres	<ul style="list-style-type: none"> ▪ Essays on nature/conservation projects ▪ Essays about NGOs 	<ul style="list-style-type: none"> ▪ <i>Articles on news and events</i> ▪ Essays on nature excursions/trips
Letters	<ul style="list-style-type: none"> ▪ <i>Letters to the editor</i> 	
Notes: Genres in <i>italics</i> represent the major categories that are present in MN (see Figure 4.3 for details).		

Table 4.4: Genres colonies in Malaysian Naturalist.

From Table 4.4, we can surmise that promotional genres in MN are usually associated with generic texts related to tourism, CSR and campaigns (primary) whilst genres such as photos and book/gadget reviews may only be partially promotional (secondary) within the colony. It is common for tourism-, CSR- and campaign-related genres to be more promotional than the latter due to their descriptive, evaluative and persuasive nature.

Editor's notes in MN are the only primary member that can be grouped in introductions (genre colony) whilst the majority of genres in natural history i.e. the essay articles (on travels and tourism, nature, conservation and about people) are just secondary because they only contain a few introductory contents. They neither fit into the genre colonies of reporting genres (except for articles on news/events) nor letters (except for the letters to the editor) – therefore, a new genre colony (as explained later) may be relevant in this context to address the gap.

4.2.6 Malaysian Naturalist: Hybrid genres in natural history

Genre bending is inevitable in professional discourses of natural history because of the dynamic complexity in the interdisciplinary context they belong to. Hence, combined genres of different types, or hybrid genres are pervasive in MN. Both mixed and embedded genres in MN serve multiple communicative purposes (Bhatia, 2002a)

through their innovative, dynamic and creative forms. These communicative purposes underpin specific private intentions (Bhatia, 2004) that are socially recognised and accepted by the discourse community in natural history. For example, hybrid genres are produced to educate or teach public environmental literacy, advocate conservation and promote the appreciation of nature and the environment.

4.2.6.1 Mixed genres

The presence of combined genres in MN is expected. Recurring patterns of mixed essay forms have been observed in the research corpus. A typical mixed genre in natural history may incorporate sub-genres (see Table 4.5 for their definitions) such as personal essays (PE), formal essays (FE), narrative compositions (NC), natural history descriptions (NH) and other sub types. The main difference between these variations is the conversation-like descriptions in PE, the facts and knowledge referred to in FE, the story that describes the tangibility of something in NC, and the emphasis on nature or natural elements in NH. They are combined with other contributing genres from other discourses to bend or appropriate generic resources to create mixed constructs of genres in MN.

Key	Essay form	Definitions
PE	Personal essays (<i>Informal</i>)	<ul style="list-style-type: none"> ▪ “A free-wheeling device of self-expression” (CCC Foundation, n.d.-a) ▪ To communicate one’s thoughts and feelings about a topic ▪ Contains quoted languages of spoken speech (or voices) with appropriate punctuations and typographical conventions such as quotation marks, exclamation marks, question marks, etc. ▪ A popular form of creative nonfiction (Hood, 2010) ▪ Can be based on a personal observation, experience, opinion, meaning, narrative, etc. and do not need to prove the point ▪ Sometimes, the story is dramatized by using the ‘scene building technique’ (Hood, 2010) – includes settings/location, intimate details, concrete/specific descriptions, actions and often dialogues.
FE	Formal essays	<ul style="list-style-type: none"> ▪ A contrast to PE ▪ The writer may state the thesis in the outset ▪ Uses third-person pronouns ▪ Usually drawn from literature or other forms of knowledge ▪ May contain technical words according to subject/field ▪ To prove or support claims/points with facts - provide proof and involves research (Hood, 2010)

NC	Narrative composition	<ul style="list-style-type: none"> ▪ Story-telling ▪ Ability to describe something by showing, not telling (CCC Foundation, n.d.-b) ▪ Do not entirely rely on adjectives to characterise a thing's attributes – but uses nouns and verbs (for readers to see and feel) for the work of description ▪ Delivers emotional impacts
NH	Natural history descriptions	<ul style="list-style-type: none"> ▪ Observational descriptions of natural elements – knowledge of nature and the natural environment ▪ Concerns with the identification, life history, distribution, classification, aesthetic components of natural history (Herman, 2002) ▪ Include the scientific names of species e.g. <i>Homo sapiens</i> ▪ Adjectives are commonly used to describe features/attributes

Table 4.5: Definitions of sub-genres (of essay forms) in mixed genres found in MN.

Table 4.6 shows the composition of mixed genres (formed by patterns of sub-genres) found in the corpus of MN and the interdiscursive relationships hybrid genres share with different disciplinary and professional discourses in natural history.

	Article title	Genre category	Organisational structure of mixed sub-genres	Interdiscursive genres (textual)
(16)	Enter the dragon: Err... What about the striped carnivore??? (MN-Mac2012, p. 16-17)	Essays on conservation	NC – news – NC	Discourse of astrology (zodiac), legal discourse (legislation, judiciary)
(17)	Paying attention to garden birds (MN-Mac2012, p. 18-20)	Essays on birds	PE – NC (with floating announcement and invitation)	Discourse of geography (map), Instructional discourse (procedures, tips)
(18)	The artistry of raptors (MN-Mac2012, p. 34-41)	Essays on birds	PE – NC – PE – NH – NC – PE – NC – PE – NC – PE (with a floating invitation)	Tourism discourse (heritage site), Symbols (logo)
(19)	The health-conscious beetle (MN-Dec2011, p. 8-9)	Essays on insects	PE – NH – PE	Academic genres (references)
(20)	A lovely encounter at Manukan Island (MN-Dec2011, p. 33-35)	Essays on nature excursions Essays on forests (mangroves)	PE – NH – PE	Academic genres (references, acknowledgments)
(21)	Panti: The Southern Tip of Malaysia's Lowland Forest Corridor (MN-Dec2011, p. 36-39)	Essays related to places of attractions	NC – PE	Academic genres (bibliography), Embedded genre (poem)
(22)	Discover the Waterworks Walk (MN-Dec2011, p. 50-57)	Essays on nature excursions Essays on animals, insects, birds, plants and trees	PE – NH – PE – NH – PE	-
(23)	The fearless Georgetown's Colugo (MN-Sep2011, p. 8-9)	Essays on animals	PE – NH – PE – NH	-

(24)	Fairchild and the Clitoria named after him (MN-Sep2011, p. 12-14)	Essays on trees	NH – biography	Medical discourse (medicinal properties, treatments)
(25)	Fighting fires in Raja Musa Forest Reserve (MN-Sep2011, p. 18-21)	Essays on forests	NC – NH – NC (with a column for an NGO profile)	Embedded genre (information poster)
(26)	Polinator activities of the Kerlik (MN-Sep2011, p. 22-23)	Essays on trees	NH – PE (observation report) - NC	Academic genres (references, acknowledgments)
(27)	The Fireflies of Cukai River (MN-Sep2011, p. 42-43)	Essays on insects	NC (the place) – NH – FE (observation report)	Discourse of geography (map and locations), Scientific discourse (anatomic and technical descriptions), Academic genres (references, acknowledgments)
(28)	Frangipani Langkawi: Living the passion (MN-Jun2011, p. 3-4)	Tourism advertorials	Advertisement – NC – biography – NC (with a floating achievement message) Note: NC in the form of an editorial	-
(29)	Death of a mermaid (MN-Jun2011, p. 28-31)	Essays on animals	Lots of intermixing between fiction, NH and NC (with a floating key message) An instance of PE is also found within the bending.	Discourse of geography (context of place), discourse of conservation, Embedded genre (fiction)
(30)	Inside the quail trap (MN-Jun2011, p. 32-36)	Essays on nature excursions Essays on plants	NC – PE – NC – PE – NH – PE – NC (with a column for NH i.e. species description, and another column for NC i.e. legend or myth)	-
(31)	Protect the planet's lungs (MN-Mac2011, p. 5)	Editor's note	Acknowledgment (thank you) – NC – NH (forest) - NH	-
(32)	A milky in Melaka (MN-Mac2011, p. 7)	Essays on birds	News – NH	Academic genres (references)
(33)	Alien invasion (MN-Mac2011, p. 20-21)	Essays on insects	PE – NH	Academic genres (references, acknowledgments)
(34)	Penang island: Not just an eating, shopping and heritage hub (MN-Mac2011, p. 36-39)	Essays related to places of attraction Essays on forests (mangroves)	NC – PE – NH – NC	Tourism discourse (history, local attractions, food, local products)
Keys: PE = personal essays, NC = narrative composition, FE = formal essays, NH = natural history descriptions				

Table 4.6: Mixed genres and interdiscursivity in MN.

NH has been the *de facto* genre in the world of natural history since the old days and has continued to proliferate as rich, specialised and niche-specific descriptions about nature and the environment in contemporary times. It used to be a distinct genre of its own that is expressed in various essay forms that blend with scientific, science and nature writing styles until mixed genres were introduced. At present, we can still find mixed genres that begin with NH in (24) and (26) then followed by other sub-genres such as biography, PE and NC. These patterns follow the traditions of natural history whereby an element of nature is introduced immediately as the main topic to the readers on the outset of an article/essay.

However, genres these days tend to be in hybrid forms to meet the dynamic complexity of professional communication (Bhatia, 2004) that is influenced by contemporary informational needs and the compulsive nature of promotional activities. Therefore, in Table 4.6, the observed common patterns of mixed genres suggest that NH is always present in essays that relate to nature (birds, insects, animals, forests, trees, places, etc.) and NH is usually blended with PE and NC sub-genres as shown in (18), (19), (20), (22), (23), (25), (27), (29), (30), (31) and (34) whilst NH are placed at the last position of mixed genres in isolated cases such as (32) and (33). The middle-genre behaviour of NH in mixed genres implies that they constitute the main and most important content; hence their frequent presence in any genres related to nature, Natural Sciences, Ecological Humanities or environmental studies. In addition, they are introduced in between PE and NC in most cases for a rhetorical purpose and a deliberate intention to present NH contents intuitively so they can blend-in naturally in between discourses that act as platforms to facilitate the reception and comprehension of natural history knowledge for the readers. Let us now zoom into an interesting article (18) of a mixed genre to walk through the intermixing process of genre bending in the following:

(35) ... I've never been much of a bird enthusiast but the sight of these beautiful creatures flying across the blue skies, was enough to bring out the dormant birder in me. [PE]

(a few lines apart)

- (36) ... the **Cape Rachado lighthouse**, the country's oldest lighthouse (built in the 16th century) right at the top of a pristine coastal rainforest reserve (**Tanjung Tuan Forest Reserve**) ... [Tourism discourse]

(a paragraph apart)

- (37) The majestic **aerial display by the raptors** or birds of prey ... occurs during the spring migrating season between mid February to April every year ... from the Southern Hemisphere as winter draws to an end ... converge ... roost and feed ... [NC]

(a few lines apart)

- (38) When **I** first heard about raptors, **I** shuddered at the thought likening them to the ferocious Jurassic Park prehistoric velociraptors ... fodder of **my** nightmares ... **I** obviously had a lot to learn! [PE]

- (39) **Raptors**, also known as birds of prey, are **carnivorous** birds with **strong bills**, **large talons** and possess **exceptional flight capabilities**. Some of the well-known species of raptors include **eagles, hawks, falcons**, and many more. [NH]

- (40) The survival of this unique phenomenon is invariably linked to the survival of the **natural habitat** that is prevalent of Tanjung Tuan, a lovely little forested cape ... diptocarp trees and home to many small animals, birds and insects. [NC]

(a few paragraphs apart)

- (41) **I** stood on that observatory deck at the lighthouse with the sun beaming down **my** face ... It was well worth the sunburn **I** earned while watching them that hot sunny day! [PE]

(a few lines apart)

- (42) ... an awareness event called the **Raptor Watch**, organized by the nation's oldest environmental NGO ... Held on the first weekend of March every year ... [NC]

(a few lines apart)

- (43) **My experience** with Raptor Watch was incredible till today, **I** still find ... [PE]

(a few lines apart)

- (44) **Raptor Watch** is celebrated in a carnival-like atmosphere, bustling with activity ... [NC]

(a few lines apart)

- (45) ... It just made **me** smile. As they say, **"The best things in life are often free."** [PE]

(some blank space)

(46) [A logo resembling the silhouette of an eagle with its wings spread wide apart – at the middle, a text that reads “**RAPTOR WATCH 2012** www.mns.my”] followed by a floating message that says “Special message: Come visit Raptor Watch 2012, 10-11th. More info at www.mnsrw2012.wordpress.com” [Symbol (logo) and a brief invitation]

(Elena Koshy, *Malaysian Naturalist-Mac2012*, p. 34-41)

Excerpt 4.4: An interesting example of mixed genres in MN.

We can trace the mixing of sub-genres in Excerpt 4.4 as they follow the sequence of PE – NC – PE – NH – NC – PE – NC – PE – NC – PE that constitute an essay on birds, in this case, they refer to the raptors and the phenomenon of annual migration. Personal essays or PE are identified by the use of first-person pronouns such as the ‘I’ point-of-view including ‘me’ and ‘my’ in (35), (38), (41), (43) and (45). Meanwhile, narrative compositions or NC pertaining to the topics of aerial phenomenon, natural habitat and the event called ‘Raptor Watch’ are mixed intuitively within the essay in (37), (40), (42) and (44).

In between these interlocking PE and NC sub-genres, there lies a space that occupy the natural history descriptions or NH in (39) that define the meaning of raptors and their physical attributes with *adjectives* such as ‘*carnivorous* bird’, ‘*strong* beak’, ‘*large* talons’, and ‘*exceptional* flight capabilities’. This part within the hybrid genre, although brief yet concise, is both educational and informational – thus, sub-genres of PE, NH and NC are legitimately combined to deliver these communicative purposes in an innovative and dynamic manner. Strategic configurations like this enable the readers to learn and appreciate knowledge of the natural world more effectively.

In addition, other discourses may intersperse among the sub-genres that construct the essay in Excerpt 4.4. For example, tourism discourse is interdiscursively inserted in (36) to promote the lighthouse known as ‘Cape Rachado’ (as a heritage site) and the natural reserve ‘Tanjung Tuan’ (as a place of attractions) which is related to the

topic of the article. Furthermore, the proximity between a symbol with text in (46) and the accompanying floating invitation message, placed at the end of the mixing sequence creates an interesting interdiscursive relationship that summarises what the mixed genre (or the article) is all about – at the same time, these creative sub-genres (in a hybrid form) are promoting the event called ‘Raptor Watch’ to the readers.

Now, we will zoom out and revisit Table 4.6 to briefly examine interdiscursivity (Bhatia, 2004; 2008a; 2010) of other mixed genres in MN. Academic genres in the form of a list of references (or bibliography) and acknowledgments are norms in natural history texts. They can be considered as one of the main contributing genres in creating mixed genres, e.g., in (19), (20), (21), (26), (27), (32) and (33) because they are closely related to the conventions in the discipline of Natural Sciences. Other interdiscursive genres that are found in MN includes the discourses of astrology (16), discourses of law (16), discourses of geography (17) (27), discourses of instructions (17), discourses of medicine (24), discourses of life sciences (27), discourses of conservation (29) and discourses of tourism (18) (34). Due to the limited space of this report, we will not delve further on the interdiscursivity process that give rise to these discursive instances. However, it is important to note that genre mixing also takes place across disciplinary and professional genres in natural history i.e. interdiscursivity, to bend generic conventions into novel and innovative forms of discourse to serve sophisticated communicative purposes – “without opting out of the socially established generic boundaries” (Bhatia, 2002a, p. 12) to prevent tensions and conflicts in the resulting hybrid forms.

The pattern of genre mixing that incorporates the sub-genre of FE is interesting in example (27) although this occurrence is isolated and uncommon in the corpus being studied. Let’s have a quick examination of this mixed genre in the following:

<p>(47) Cukai River in Terengganu is one of the rivers in the district of Kemaman. [NC]</p> <p>(a few paragraphs apart)</p>

(48) ... the display tree of fireflies are mainly the ‘berembang tree’ (*Sonneratia caseolaris*), here the ‘putat’ (*Barringtonia conoidea*) and ‘rengas’ (*Gluta renghas*) are the main ... Old ‘berembang’ trees have been found to attract fewer congregations of the fireflies in Selangor River (Nallakumar, 2002) ... [NH]

(a few paragraphs apart)

(49) It was observed the firefly population was confined to parts of the river where the salinity was recorded between 0.0 and 0.1 ppt. Readings taken ... two main firefly ecotourism areas, recorded a 10 ppt and 2.8 ppt reading, respectively (Hashim & Hassan, 2006) which was much higher readings compared to the levels detected in the Cukai River firefly habitat. (FE)

(a few paragraphs apart)

(50) Specimens of fireflies were collected during the trip are listed in Table 1. The distributions of the sampled trees along the river are shown in Fig 2. During the trip to Cukai River, the author was informed that the firefly, *Pteroptyx tener* occupied the upper reaches of the river ... managed to collect specimens of *P.tener* and *P.beamii* ... The larva collected during the trip had similar morphological characteristics with the firefly larva dominantly found in Selangor River (Nada et al., 2010). The collected larva is most likely to be of *P. tener*. (FE)

(51) [Photos: Anatomical display of the collected firefly larva – with technical descriptions]

(52) [Table 1 with a caption “Firefly species and the host plants” containing scientific names for firefly species and host plants with their corresponding geographical location coordinates]

(53) [Photo: A topographical map of the research site i.e. Cukai River with indication of firefly distribution along the river]

(Nada Badruddin, Malaysian Naturalist-Sep2011, p. 42-43)

Excerpt 4.5: Another interesting example of mixed genres in MN.

In Excerpt 4.5, we can outline the sequence of sub-genres that are mixed together within an article on insects (fireflies) as follows: NC – NH – FE. The article started with a narrative composition about a place called Cukai River (47), followed by some scientific names of fireflies-inhabited trees (48) while the remaining parts of the article

are composed of formal essays in (49) and (50) that display heavy scientific writing forms and intertextual elements. Text examples such as ‘ppt’ (a scientific measurement) (49) and *Pteroptyx tener* or *P.tener* (scientific naming of species) (50) are obviously technical and can only be understood by readers who have the necessary scientific background or expertise. The in-text citation referencing in (48), (49) and (50) are intertextual features that are ‘functional’ (Devitt, 1991) that points to a larger macro-text to support the claims and findings made by the author.

Meanwhile, the sign-posts of ‘Table 1’ and ‘Fig 2’ in (50) are examples of ‘referential’ intertextuality (Devitt, 1991) that directs readers to refer to other texts located within the interdiscursive space of the mixed genre i.e. inter texts in the table of findings (52), anatomic diagram (51) and marked topography map (53). These elements are instrumental because they provide the credibility and proof needed by the author in FE writing to convince readers to accept his/her research findings. Therefore, a mixed genre with a high degree of intertextuality (especially in FE) are usually unpopular in natural history discourses because the scientific nature of it may not be appealing to the general public in the context of MN, but it may be suited for publication in scientific journals.

4.2.6.2 Embedded genres

Embedded genres are not common in MN. However, they do exist and function sophisticatedly to disseminate knowledge on natural history to the readers. For example, the essay on dugongs (29) in Table 4.6 shows an intuitive blend of genres where the generic form of a fiction is used as a template to effectively give expressions on the importance of conservation for these marine mammals. Descriptions on dugongs and their natural history are cleverly embedded within a fictional story (see Excerpt 4.6a) that appeals especially to the young minds by capturing their attention and reading interest by means of alluring narratives.

(54) AN EARLY SUN WAS ALREADY WARMING the shallow waters of the bay promising a hot day ahead. The dugong and her calf swam leisurely across an inlet, like pale-skinned tourists against the emerald water, taking a swim after their breakfast browsing the seagrass buffet. Every day they moved feeding grounds ... **[Fiction]**

(a paragraph apart)

(55) The mother stopped to rest and touched her calf with her flipper as it nursed. **Dugongs have mammary glands on their chest like humans.** She was 40 years old and this was her fourth child. **Dugongs become reproductively mature at about the same time as humans, in their early teens, but pregnancies usually occur in the mid-teens. A dugong carries her baby for approximately 14 months before it is born in the warm shallow waters of a tropical bay and then it is brought to the surface for its first breath of air.** **[Fiction embedding NH]**

(a few lines apart)

(56) **The common name ‘dugong’ comes from the Malay “duyong” meaning lady of the sea. Although their scientific name “Sirenia” comes from the Greek seiren (seductive sea nymphs), they should be more appropriately be considered “mothers of the sea” than mermaids. Their closest land relative is the elephant.** **[embedded NH]**

(a few paragraphs apart)

(57) Her second child did not survive also. They had been browsing the seagrass when she heard the propellers. They tried to flee but dugongs are slow swimmers, barely faster than a good human swimmer. **They have to breathe but, unlike dolphins and whales, do not have a blow-hole at the top of their head just nostrils at the end of the nose like us.** Breathing while swimming fast is not as easy for them. **[Fiction embedding NH]**

(Ashleigh Seow, Malaysian Naturalist-Jun2011, p. 28-31)

Excerpt 4.6a: Embedded genres (natural history within a fiction) in MN.

Other examples of embedded genres in MN include the use of literature/poetic devices such as a poem (structure and layout) to describe a bird sanctuary in (21) and the listing of main points expressed in the form of an information poster within an article on peat forests (26).

4.3 INTERPRETIVE GENRES: A NEW GENRE COLONY

This research has given me an opportunity to propose the emergence of a new genre colony called ‘interpretive genres’ that is discovered from previous findings. The existence of interpretive genres is derived by means of genre analysis (Swales, 1990; Bhatia, 2004) and content analysis based on the principles of interpretation (Tilden, 1957) and interpretive writing (Leftridge, 2006). To support my proposition, I will provide a generic description of interpretive genres, define its characteristics and features, and analyse the structural/cognitive patterns that construct its move-structure.

4.3.1 Generic description of interpretive genres

‘Interpretive genres’ comprises a constellation of closely related genres (Bhatia, 2004) within and beyond the disciplinary boundaries of natural history. It is a colony where its genre members share common and overlapping communicative purposes, which is to establish emotional and intellectual connections between the audience’s interest and natural elements or resources. Nonetheless, ‘interpretive genres’ has the intent to elicit a prosocial effect (Leftridge, 2006) by means of informal/non-formal education that guides the audience to understand, appreciate and ultimately to protect and conserve the natural heritage or legacy that are being talked about (Tilden, 1957; Beck & Cable, 2011) in natural history discourses.

The complexity within the communicative purposes that ‘interpretive genres’ is trying to achieve is realised by an intuitive combination of rhetorical acts or ‘generic values’ (Bhatia, 2002a) that includes narratives, descriptions, explanations, problem-solutions, provocations and other rhetorical forms pertaining to emotion. It is crucial to note that generic values that are ‘provocative’ and ‘emotive’ are unique and pertinent to the specification of ‘interpretive genres’. The generic description of ‘interpretive genres’ is outlined in Figure 4.5.

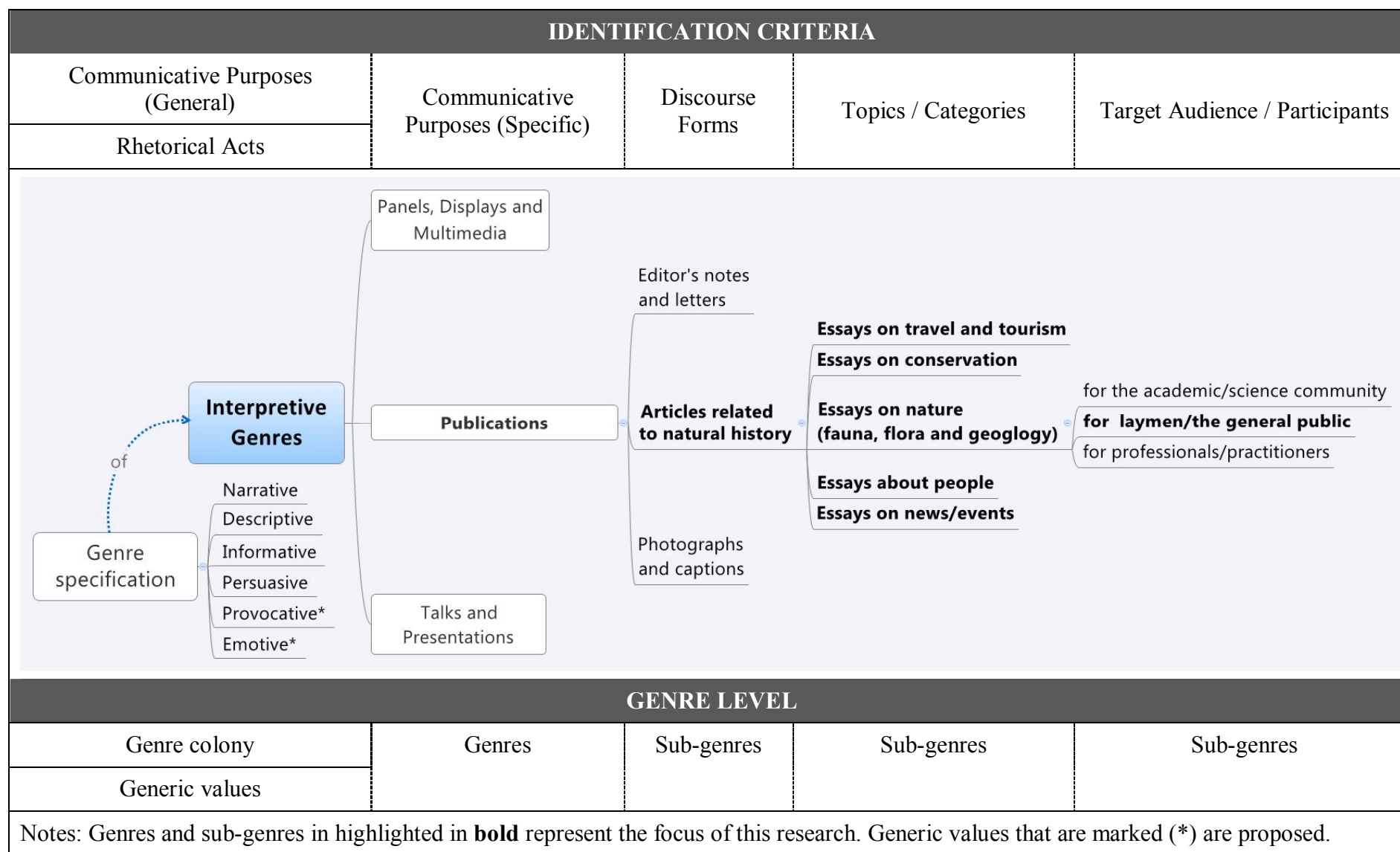


Figure 4.5: Generic description of interpretive genres in natural history.

In Figure 4.5, the genre colony ‘interpretive genres’ is described from two different perspectives: identification criteria (for the classification of genres/sub-genres) and ‘genre level’ (Bhatia, 2004, p. 59) (the level of generalisation of genres within the colony). All closely related genres are grouped within the genre colony based on the principle that they share similar communicative purposes, at least partially, if not exclusively. Hence, each genre member is ‘interpretive’ because it has to achieve the communicative goals of ‘interpretive genres’ and performs a combination of rhetorical acts of narrative, descriptive, informative, persuasive, provocative and/or emotive.

At a level below the genre colony of ‘interpretive genres’ is where other genres with specific communicative purposes reside e.g., interpretive (a) panels, displays and multimedia forms (b) publications, and (c) talks and presentations. These genres serve different audiences in various forms that can either be personal or non-personal interpretation. The former method (personal interpretation) usually requires human interactions and communication whereas the latter is performed in by self-guided means. Thus, different strategies may be useful depending on their suitability for different genres. Nevertheless, these genres share similar educational and provocative nature, and perhaps their linguistic and discoursal features would overlap as well.

Now if we focus in one genre, say, publications, we can further delineate sub-genres at a lower level of generalisation that includes editor’s notes and letters, articles related to natural history, and photographs and captions. These sub-genres are identified by their distinctions in terms of discourse forms that are commonly found in natural history publications such as the MN magazine.

Then, we can also see how other sub-genres are realised by different identification criteria which provide the specifications necessary for each genre description level. For example, natural history articles are composed of many other sub-genres such as (a) essays on travel and tourism (b) essays on conservation (c) essays on

nature (d) essays about people, and (e) essays on news/events. This classification is posited at a level of generalisation that is based on genre topics or categories. Similarly, if we delve further on the essays on nature, we can find a lower level of sub-genres that are audience-specific or participant-based. Sub-genres that are constructed specifically for the academic/science community, laymen/the general public and professionals/practitioners, are examples at this level.

In general, genres and sub-genres that describe ‘interpretive genres’ in Figure 4.5 may not be comprehensive enough to cover all the variations that may exist at different levels of generalisation within the colony. This is because the genre colony ‘interpretive genres’ is still growing and distinctive genres may be included or opted out as their communicative purposes changes over time. Thus, members within the colony can be added or the existing genres/sub-genres can also develop or become obsolete as their communicative purposes deviates from their original intent.

It can be assumed that all genres/sub-genres within the ‘interpretive genres’ colony are primary members if they share similar communicative purposes that has to be ‘interpretive’. These members are grouped together in close proximity according to the genre relationships they shared within the colony – hence, any genre/sub-genre that is a primary member has the adjective modifier ‘*interpretive*’ attached to the noun phrase that names the genre in question. For example, primary members of this colony may include ‘*interpretive* conservation article’, ‘*interpretive* nature article’, ‘*interpretive* essays about the environment’, etc. Meanwhile, some genres are secondary within the colony and are usually associated with hybrid genres such as book reviews on field guides, tourism advertorials, conservation campaign posters, nature project reports, NGO introductions, etc. Though these genres/sub-genres are considered to be the secondary members within the colony of ‘interpretive genres’, they could be legitimate members in other genre colonies.

4.3.2 Characteristics of interpretive genres

Based on my literature reviews on genre analysis and heritage/nature/environmental interpretation, as well as empirical findings drawn from analysis of discourses in natural history, it was found that ‘interpretive genres’ exhibits these characteristics:-

- Incorporates the principles of interpretation (Tilden, 1957) i.e. the inclusion of the principles of ‘RELATE’, ‘REVEAL’, ‘ART’, ‘PROVOKE’, ‘WHOLE’ and ‘CHILDREN’
- Forges intellectual and emotional connections between the audience and resource of the natural world
- Consists of ‘interpretive writing’ (Leftridge, 2006) – blending and mixing of writing styles in various proportions; these includes science writing, scientific writing, nature writing, creative writing, historical writing, informational writing, etc.
- Objective-focused with a goal in mind to encourage prosocial behaviours or changes that benefit others i.e. voluntary, proactive and altruistic
- Usually narrative and descriptive, at least most of the times (especially in natural history – elements are given a life or personalities, and interconnections and interrelationships are often expressed to evoke meaningful insights and relationships for the audience)
- Always linking tangible attributes of elements to their inherent intangible qualities that are meaningful to the audience through universal concepts that are compelling.
- Possible conformance to the move structure (as explained later) that represents generic cognitive and structural patterning of ‘interpretive genres’

4.3.3 Malaysian Naturalist: Move-structure of interpretive genres

Many articles of MN have been reviewed and findings have shown emerging patterns of communicative purposes being realised within discourse structures of genres belonging to the colony of ‘interpretive genres’. Hence, a generic structure is proposed in Table 4.8, which suggests a model for genre analysis of interpretive genres based on the findings derived from move analysis of four selected ‘interpretive’ natural history-related articles (see Table 4.7).

The move structure proposed in Table 4.8 consists of five obligatory moves which are identified in genre samples of interpretive genres. They are:

Move 1: Announcing a topic/theme

Move 2: Introducing the topic

Move 3: Discussing the main issue(s)

Move 4: Promoting (a) change(s)

Move 5: Ending with an impact

Steps or sub-moves within each move are mostly optional but several of them prevail (see Table 4.8 for highlighted items in the column named “Move Analysis”) and are dominant in the corpus that is being analysed. Genres selected for the corpus consist of those listed in Table 4.7.

MN issue	Article	Topic	Interpretive genre	Refer to:
Mac 2011	Death of a mermaid (by Ashleigh Seow)	Dugong	Nature article	Table 4.9
Jun 2011	Reptiles go extinct ... Does it affect us? (Lee Grismer)	Conservation of species	Conservation article	Table 4.10
Sep 2011	Just closure (by Shenaaz Khan)	Zoo	Conservation article	Table 4.11
Dec 2011	[None selected]	-	-	-
Mac 2012	Enter the dragon: Er... What about the striped carnivore? (by Melvin Gumal & Shenaaz Khan)	Tiger conservation	Opinion article	Table 4.12

Table 4.7: Corpus of interpretive genres selected for move analysis.

Move Analysis (Communicative Purposes)	Principles of Interpretation
Move 1: Announcing a topic/theme Step 1 Creating an attractive title Step 2 Providing an interesting lead Step 3 Giving credit to relevant sources	ART RELATE PROVOKE WHOLE
Move 2: Introducing the topic Step 1 Creating an introductory narrative <i>and/or</i> Step 2 Describing natural history (also in Move 3)	REVEAL RELATE
Move 3: Discussing the main issue(s) Step 1 Problematising (an) issue(s) - Explaining the problems/threats/dilemmas/challenges/difficulties <i>and/or</i> - Highlighting the associated risks/dangers/consequences/results <i>and/or</i> - Supporting claims with statistical information Step 2 Elaborating the context - Exemplifying aspects of context with specific cases/places/settings <i>and/or</i> - Highlighting the local situation and its implications <i>and/or</i> - Relating to society and culture <i>and/or</i> - Making a comparison between context <i>and/or</i> Step 3 Describing natural history (also in Move 2)	PROVOKE REVEAL PROVOKE RELATE
Move 4: Promoting (a) change(s) Step 1 Advocating ideas/solutions/propositions Step 2 Justifying the rationale for advocating change	
Move 5: Ending with an impact Step 1 Raising (a) thought-provoking question(s)/statement(s) <i>and/or</i> Step 2 Generalising (a) prosocial behaviour(s)/action(s) /thinking <i>and/or</i> Step 3 Warning about a grim future if no action taken <i>and/or</i> Step 4 Expressing hope for a brighter future	

RELATE, REVEAL, ART, WHOLE, PROVOKE & CHILDREN

Notes: The highlighted items are prevalent in the discourse structures.

It is interesting to note that instances of interpretive genres do exist in almost every issues of MN – these samples are specifically chosen for move analysis because they also incorporate many of the principles of interpretation within the genre in question. Thus, in Table 4.8, the column named “Principles of Interpretation” contains relevant principles that are prevalent within each move and across all the moves of a particular genre. We will observe later, how these principles are applied within moves/sub-moves within the discourse structure of interpretive genres (as explained later from the socio-cognitive dimension). In the meantime, based on the proposed generic structure in Table 4.8, we can surmise the following relationships between moves/sub-moves and the principles of interpretation:

Move 1: Strongly associated with the principle of ‘ART’

Move 2: Explains the rationale for the principle of ‘WHOLE’

Move 3: Strongly associated with the principles of ‘REVEAL’ and ‘RELATE’

Move 4 and 5: Strongly associated with the principle of ‘PROVOKE’

All the moves: Show close relationships with all the principles of interpretation and the principle of ‘WHOLE’ may be essential to the totality of the genre

Based on these relationships, specific principles of interpretation function by reflecting on the communicative purposes that are served by specific moves/sub-moves in the generic structure of interpretive genres. This is quite common in the discourses in natural history, for example:

- Topic title in Move 1 has to be interesting (ART) to capture the reader’s attention.
- The problem-context descriptions in Move 3 usually link the reader’s interest (RELATE) with the importance/significance of something (REVEAL).
- To encourage changes or advocate ideas, one has to evoke thoughts and emotions by words (PROVOKE).

We will revisit the above again (as explained later) and until then, a detailed move analysis of interpretive genres is presented in Table 4.9, 4.10, 4.11 and 4.12.

Text from an interpretive conservation article (Mac 2011)	Moves/Sub-moves
<p>Reptiles Go Extinct ... Does It Affect Us?</p> <p>Lee Grismer tries to shed some light to the simple but pertinent question of why the conservation of species from extinction is so important.</p> <p>TEXT & IMAGES: LEE GRISMER</p> <p>ONCE, WHILE GIVING A PUBLIC PRESENTATION on my work in Peninsular Malaysia; I highlighted a new species of frog (<i>Leptolalax kajangensis</i>) we had recently discovered. I noted that this little frog lived in a cave 10m underground at the very top of an isolated mountain on the small, distant Malaysian island of Tioman in the South China Sea. After emphasising that this species is known I passionately argued that it deserved protection. After the presentation, an elderly gentleman came to me and asked, “Why is it important to protect this species and how would it affect me if it went extinct?” I was stunned at the simplicity of the question and felt chagrined by fact that I had no real answer. I blurted out the partly line that “every species is unique and it deserves protection, we don’t yet know what its potential benefits to humanity are and that every species is part of a large puzzle composing the ecosystem.” – true, but generally unsatisfying long-term answers to a general public that has real, short-term problems and concerns. The man politely thanked me and walked away but we both knew his question hadn’t really been answered.</p> <p>Shortly afterwards I heard an official from an international conservation organisation on the radio being asked why bluefin tuna should be protected. Her reasons were even less germane than mine – “These are beautiful fish, they are sleek, high performance swimmers, they have incredible capabilities for accelerating.” – All laudable characters that have no bearing whatsoever on why this species should be protected. Using that line of reasoning we should never have let Mercedes-Benz stop production of the 300 SL in 1958 nor allowed Chevrolet to let the Corvette Stingray go extinct in 1968 – arguably the most beautiful, high-performance sports cars of their time with amazing acceleration. And by extension, this line of logic does not protect “ugly” or unremarkable species.</p>	<p>Announcing a topic/theme</p> <p>Creating an attractive title</p> <p>Providing an interesting lead</p> <p>Giving credit to relevant sources</p> <p>Introducing the topic</p> <p>Describing natural history</p> <p>Creating an introductory narrative</p> <p>Describing natural history (combined with narratives to provide literary descriptions)</p>

<p>So, would the extinction of <i>Leptolalax kajangensis</i> affect humanity? Most likely, not. It could blink out of existence and no one would ever notice. So then, why is it worth protecting? Species, any species (and some more than others), are worth protecting at least on principle alone. If we knowingly let the little frog on the top of the mountain go extinct then we are sending a clear, unmistakable message saying that it is acceptable to let some species die out. This is a slippery slope on which we dare not tread. If we allow the extinction of selected species then where do we draw the line? Who decides which species stay and which are expendable? What criteria are used to decide this?</p>	<p>Discussing the main issue</p> <p><u>Problematizing issues</u></p> <p><i>Explaining the problems/dilemmas</i></p> <p><i>Explaining the difficulties/challenges</i></p>
<p>Would this policy of selective extinction strengthen the general public's increasing toleration of the decline of top predators around the world even though we know this will drastically alter ecosystems (Stolzenberg 2008) and likely have direct, negative consequences on humanity (Diamond 2011)? These are just some of the issues we will have to face if we embrace selective extinction.</p>	<p><i>Highlighting the associated risks/dangers/consequences/results</i></p>
<p>I find Peninsular Malaysia to be one of the most promising areas in Southeast Asia in terms of conservation. It has a remarkable amount of its natural habitat still intact and numerous state and national parks and wildlife reserves are in place to help insure the integrity of this habitat. There is, however, a growing concern about the rapidly expanding oil palm plantation in southern Johor and eastern Pahang. Additionally, the ongoing construction of a cable car from Taiping up the west flank of the Banjaran Bintang to Bukit Larut is heartbreaking to many. Contrary to popular belief, in general, Peninsular Malaysia is in good shape, its citizens are generally proud of their natural heritage, and they want it left intact.</p>	<p><u>Elaborating the context</u></p> <p><i>Highlighting the local situation</i></p> <p><i>Exemplifying aspects of context with specific cases and places</i></p> <p><i>Relating to society</i></p>
<p>Many spend their weekends enjoying recreational parks ('hutan lipur') set aside for relaxing, trekking, and just getting out into nature. Societies such as the Malaysian Nature Society (MNS) are in place to help ensure these activities continue. Thanks to the Malaysian government, national parks and wildlife reserves are becoming very well-studied and scientists are allowed unprecedented access into some of the most ancient, pristine ecosystems in Southeast Asia. This progressive attitude positively positions Peninsular Malaysia as an example to other Southeast Asian nations as to how they might manage natural resources of their own parks and reserves.</p>	<p><i>Relating to culture</i></p> <p><i>Highlighting the local situation and its implications</i></p>

<p>Other nations often establish national parks and reserves in the name of conservation but make it exceedingly difficult for scientists to gain legal access to study the processes that drive their ecosystems. This, in my opinion, is the second worst thing that can be done to the environment (the first of course, would be to destroy it). It is in many ways counterproductive to set aside a protected area and fail to take the opportunity to figure out how it works and then apply that knowledge to other endangered regions. This is tantamount to building a library to read them. We can learn a great deal by thumbing through the pages of the species in our natural libraries and this will go a long way towards helping us understand the natural processes that sculpt and maintain our current day ecosystems. Peninsular Malaysia is just such a library.</p>	<p><i>Making a comparison between context</i></p>
<p>And here the scientists need to play a more active role in educating governments and the general public by showing them why conservation is important and how it can be properly done. A common slogan I have seen for the last 40 years posted at the beginning of hiking trails in parks and reserves all around the world (and of course, each nation claims to have coined it) is “Take only pictures and leave only footprints”. At first blush, this folksy little Sarah Palin-esque phrase that rolls off the tongue so easily seems to make good sense.</p>	<p><i>Making a comparison between context</i></p>
<p>But in fact, it is quite misleading and in essence anti-conservationist. The problem is this admonition is applied to scientists as well as the general public by governments who do not understand that to effectively manage a species, it must be studied and some of its individuals must be collected. Therefore, scientists need to spend a little more time sharing their information with the general public and governments in a way that explains why it is necessary to sample a few individuals in order to save the species to which those few individuals belong.</p>	<p><u>Problematising issues</u></p> <p><i>Explaining the problem</i></p> <p>Promoting changes</p> <p>Advocating an idea</p>
<p>One of the cornerstone issues in the role of conservation is taxonomy. Simply stated we cannot protect something if we do not know what it is or that it exists. Some of my colleagues have shelves crowded with jars of un-described species waiting in an interminable queue for their deserved attention. This does not bode well for conservation. More disturbingly, some of my colleagues have even told me that describing new species is “beneath them”. Unfortunately, the environment nowadays cannot afford this sort of self-anointed elitism and it will suffer needlessly because of it. My suggestions here are simple. First, if you don’t want to, or don’t know how to describe a species, give them to someone who does. Describing species is not hard but it may be too time consuming for many non-tenured people</p>	<p>Advocating a proposition (1)</p> <p>Justifying the rationale</p>

<p>who need hypothesis-driven publications in top-tier journals.</p> <p>In such cases, turn the descriptions over to students or someone else. This is an excellent way for students to learn how to write and to acquire peer-reviewed publications early in their careers. Second, publish survey papers detailing what you found and when and where you found it. Many of us are exploring unknown regions and the results of these efforts should not be relegated to being warehoused on a museum shelf or in a deep freeze for “future” use. By publishing the results of such surveys in peer-reviewed journals, local NGOs and other agencies in the region of concern are provided with a source of validated data for their own conservation efforts.</p> <p>Again, many of us don’t have the time to write such papers but this does not diminish their relevance. Turn such efforts over to students to be used as both a learning process for them and to get the data out. And third, give local talks whenever possible. If there is a nature club or society in the region where you work, set aside one night of your trip to give them a presentation of the work you are doing in their country and explain why it is important to them. I have found this augments people’s interest in their natural heritage and they are proud to know that others are willing to come and study side by side with them in their country.</p> <p>I find it disturbing that we are the only species on the planet that purposely destroys its habitat, all the while knowing that this will ultimately lead to our own demise. And we’re supposed to be the smart ones? We should be doing something to rectify this. [Graphic: Malayan tapir icon]</p> <p>[Column: “REFERENCES/LITERATURE CITED”]</p> <p>Interdiscursive elements</p> <p>[Photo 1: “<i>Cryptodactylus durio</i>, a canopy species from Sungai Sedim, Kedah and known from only one specimen.”]</p> <p>[Photo 2: “<i>Leptolaiax kajanensis</i> known only from an underground cave on the top of Gunung Kajang, Pulau Tioman, Pahang.”]</p> <p>(Lee Grismer, Malaysian Naturalist-Mac2011, p. 28-31)</p>	<p>Advocating a proposition (2)</p> <p>Justifying the rationale</p> <p>Advocating a proposition (3)</p> <p>Justifying the rationale</p> <p>Advocating a proposition (4)</p> <p>Justifying the rationale</p> <p>Ending with an impact</p> <p>Raising a thought-provoking statement</p> <p>Warning about a grim future if no action taken</p> <p>Generalising a prosocial behaviour</p>
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Table 4.9: Findings of move analysis of an interpretive nature article ("Reptiles go extinct ... Does it affect us?").

Text from an interpretive nature article (Jun 2011)	Moves/Sub-moves
<p>Death of a Mermaid</p> <p>Just like that of the little mermaid, a dugong's journey is one that reads like a sad fairytale as these majestic princesses of the sea fight for their survival.</p> <p>TEXT & IMAGES BY: ASHLEIGH SEOW</p> <p>AN EARLY SUN WAS ALREADY WARMING the shallow waters of the bay promising a hot day ahead. The dugong and her calf swam leisurely across an inlet, like pale-skinned tourists against the emerald water, taking a swim after their breakfast browsing the seagrass buffet. Every day they moved feeding grounds, mowing their way through the sea grass plains like a grass-cutting crew, favouring the shallow warmer waters in the mornings in then moving to cool deep water in the hot afternoons.</p> <p>They were fortunate to have found this large untouched bay. Their previous area was unable to sustain a viable population anymore as the rivers became increasingly murky and fouled with the metallic tang and bitter tastes of industrial chemicals, oils and household refuse as more of the coastline came under development. The once extensive sea grass began to die from poisoning or the lack of light for photosynthesis. Dugong populations either starved or migrated in search of greener pastures.</p> <p>The mother stopped to rest and touched her calf with her flipper as it nursed. Dugongs have mammary glands on their chest like humans. She was 40 years old and this was her fourth child. Dugongs become reproductively mature at about the same time as humans, in their early teens, but pregnancies usually occur in the mid-teens. A dugong carries her baby for approximately 14 months before it is born in the warm shallow waters of a tropical bay and then it is brought to the surface for its first breath of air. The interval between births is about 3 to 7 years reflecting the long 18 months that the baby is nursed before it is able to feed solely on seagrass. It also requires guidance for some time after weaning before it goes its own way. The birth intervals can widen due to environmental stress, for example if there is lack of food and safety.</p> <p>The common name 'dugong' comes from the Malay "duyong" meaning lady of the sea. Although their scientific name "Sirenia" comes from the Greek seiren (seductive sea nymphs), they should be more appropriately be considered "mothers of the sea" than mermaids. Their closest land relative is the elephant.</p>	<p>Announcing a topic/theme Creating an attractive title Providing an interesting lead</p> <p>Giving credit to relevant sources</p> <p>Introducing the topic Creating an introductory narrative</p> <p>Describing natural history (combined with narratives)</p> <p>Describing natural history (combined with narratives)</p>

<p>Dugong products are a valuable commodity. Besides the tears, the tusks, bones, teeth and tail are in demand for ornaments, ‘medicines’ or Arab dagger handles; the flesh is considered better than beef and the fat used in ointments or, in some places, fuel and lamps. Every culture on the Indian Ocean rim from Tanzania to the Arabian Gulf, Iran, India, South East Asia and the Western Pacific from China and Japan down to Australia and Oceania are traditionally devourers of the dugong.</p> <p>Later the pair moved off to a patch of seagrass to spend the night. Sleep is a series of naps of 8-10 minutes after which they surface, breather and slowly sink to the bottom again. On one of these sleep cycles she woke fully mindful of a strange muted rumbling. While the calf still slept she began to see fish all moving in the same direction. She roused the calf and followed. The rumbling grew louder; she heard clanking. By now everything was in flight: sharks, groupers, sting rays, squid, fish of all shapes and sizes. The seagrass was illuminated by several small moons and a vast dark shape appeared; thousands of creatures caught inside a gigantic maw still open and feeding on fish. She swims desperately, the frightened calf beside her. They surface to breathe at increasingly short intervals as the lactic acid builds up in their tired muscles, each breath slowing them down. Their heart rate escalates. Soon the calf cannot keep up: the mother pauses, maternal instinct strong, but realises that her responsibility to survive and hope that the calf somehow escapes. The trawl comes remorselessly ripping up coral and sea grass like a bulldozer in a forest. Her tail is already in the maw when a blaze of pain engulfs her and then nothing.</p> <p>The net is hauled on deck. The crew sort the catch – commercial fish; rays, grouper, snapper are put in the hold but the by-catch of species considered worthless, often broken bodies barely alive, is tossed back to the sea. The calf, an air-breathing mammal, was fortunately not crushed and was caught just before the net was hauled up; it is tossed overboard alive, now on its own without its mother’s guidance.</p> <p>The only ‘fiction’ in this story is in attributing these events to the life of one particular female dugong. Dugongs are regularly wounded or killed by boat strike; in Thailand, Indonesia, Malaysia and the Philippines, dugong tears, and other dugong body parts are collected and sold by local people to traders. Last year a dugong body was found in the Andaman Sea and an autopsy revealed that she had died of a heart attack, probably as a result of trying to escape the jaws of a trawl net.</p>	<p><i>Relating to society and culture</i></p> <p><u>Problematizing an issue</u> <i>Explaining the threats (3)</i></p> <p><u>Elaborating the context</u> <i>Exemplifying aspects of context with specific places</i> <i>Relating to society and culture</i></p>
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<p>But the hazards of propeller blades and traditional dugong hunting is limited compared to the decimation of dugong numbers caused by city dwellers when we pollute and destroy their food resources and encourage unsustainable commercial fishing by our insatiable hunger for seafood. Every year many dugongs drown in fish nets, die from explosions caused by blast fishing and those “lucky” ones that survive all these hazards face malnutrition in those areas where industry and development are destroying the marine environment. Whether it is Singapore’s land reclamation which probably has made dugong extinct in the Johore Strait; pesticide and fertiliser run-off from agricultural activities like oil palm plantations; the woman who seeks ‘minyak air mata duyong’ to charm the man of her dreams; those who simply seek wealth or material gratification without a care for the environment or those who fail to take action we are all at fault.</p>	<p><u>Problematizing an issue</u> <i>Explaining the threats (4)</i></p>
<p>The largest populations of dugong are now in Australia where most research takes place, next is the Arabian Gulf and the third is New Caledonia in the Western Pacific. These places are at the limits of the range. In the centre, the Indian Ocean and Western Pacific coastal belt is fragmented by habitat loss, dugong are increasingly rare and possibly locally extinct. It is ironic that dugongs and other animals that are part of the cultural history of Asia are found wild in Australia in tens of thousands when they are rare in most parts of Asia. Dugong, saltwater crocodile, whale, shark, banteng, sambar deer, rusa deer, dingo, wild water buffalo and camel populations have proliferated there to the extent that tourist operators can guarantee sightings.</p>	<p><u>Problematizing an issue & Elaborating the context</u> <i>Summarising the threats, exemplifications of various aspects of the context, and also relating to society and culture*</i></p>
<p>All is not completely bleak in Malaysia. The government has endorsed interest in dugong research providing funding for aerial surveys in Sabah and Johor. After several years of research, Dr. Leela Rajamani from the Centre for Marine and Coastal Studies, Universiti Sains Malaysia, says that the population is small, numbering a few hundreds, and declining due to low reproductive and survival rates. Incidental entangling in nets and traps is common in all parts of Malaysia. Dugong habitat loss due to coastal development is prevalent in Peninsular Malaysia as opposed to mortalities caused by blast fishing in Sabah. What is needed, she believes, is top-down and bottom-up collaboration to help in conserving dugongs. All stakeholders including government agencies, NGOs, local communities living close to dugong habitats should work together in developing dugong management plans that are suitable to local conditions.</p>	<p><u>Elaborating the context</u> <i>Exemplifying aspects of context with specific places</i></p> <p><i>Making a comparison between context</i></p> <p><i>Highlighting the local situation and its implications</i></p> <p>Promoting changes Advocating a proposition</p>

<p>It is especially sad what is happening to dugongs. Almost alone amongst mammals, the dugong does not hunt or injure us, nor does it eat our crops or our domestic livestock; compete for food with us or our animals; damage our homes or property; transmit deadly diseases to us and the like. Even the charismatic dolphin competes with us for fish and has been known to be aggressive to humans at times. The dugong is truly inoffensive. But in a South East Asia in grim pursuit of gross materialism, dumping the by-products of that desire into the seas, dugong have nowhere to go but swim into extinction unless we realize that by saving the dugong and the seas we save ourselves. [Graphic: Malayan tapir icon]</p> <p>Interdiscursive elements</p> <p>[Photo 1: “Dugong feeding.”]</p> <p>[Photo 2: “Dugong browsing seabed.”]</p> <p>[Photo 3: “Dugong taking off.”]</p> <p>[Photo 4: “Dugong drowned in fishing boat.”]</p> <p>[Photo 5: “Injury from propeller strike.”]</p> <p>(Ashleigh Seow, Malaysian Naturalist-Jun2011, p. 28-31)</p>	<p>Justifying the rationale</p> <p>Ending with an impact</p> <p>Raising a thought-provoking statement</p> <p>Warning about a grim future if no action taken</p> <p>Generalising a prosocial thinking</p>
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Table 4.10: Findings of move analysis of an interpretive nature article ("Death of a mermaid").

Text from an interpretive opinion article (Sep 2011)	Moves/Sub-moves
<p>Just Closure</p> <p>Shenaaz Khan, President of the Malaysian Animal Welfare Society shares her thoughts on the reactions on the closing down of the controversial Saleng Zoo in Johor.</p> <p>TEXT BY: SHENAAZ KHAN</p> <p>MANY AN ANIMAL LOVER WOULD SPEW the worn out quote of the famous little Indian man; a man whose threads of white and heart of gold belied his fight for justice and freedom. But amidst framed photos of adulation and loud echoes of his wise words, the human race continues its destructive decline into decadence. In Malaysia, qualities of this unavoidable ugliness has spawned societal acceptance of institutionalised cruelty.</p> <p>Last month, the Department of Wildlife and National Parks (PERHILITAN) proved that they were not just figureheads and took the unusual yet crucial step to not renew the permits of Saleng Zoo in Johor. Almost instantly though, a chorus of outrage from the zoo's management, ignorant politicians and ill-informed Malaysians rang through the media. They reviled the allegations as being unsubstantiated and downright wrong. Roaring like the proverbial lion, Saleng supporters proclaimed the zoo impeccable, its owners godly and the permit revocation unjust. These objections were objectionable and unjustifiable. The contention by some that the zoo had not infringed any laws was beyond absurd. Amongst Saleng's catalogue of crimes were 19 tiger cub carcasses chucked in a freezer, numerous permit violations involving totally protected species, the renting out of tigers for public viewing, illegal sale of wildlife, and most pressing being the deplorable conditions in which many of these animals were made to live in. Nonetheless the permit revocation was met with a disturbing level of apathetic ignorance.</p> <p>Public opinion has always been less tolerant than any system of law. Hence protestations to the zoo closure are baffling. Several naysayers have since questioned the necessity to shut down the zoo as it entailed loss of jobs for those employed by the establishment. It would appear to these indifferent few that protecting employment justified the brazen abuse and torture of animals in captivity. Some highly misguided individuals have labelled PERHILITAN's actions as heavy handed and suggested that PERHILITAN instead hold Saleng Zoo's hand in improving the conditions at their premises but merely salvaging the zoo is no remedy. They fail to understand that zoo operators are only committed to</p>	<p>Announcing a topic/theme</p> <p>Creating an attractive title</p> <p>Providing an interesting lead (?)</p> <p>Giving credit to relevant sources</p> <p>Introducing the topic</p> <p>Creating an introductory narrative</p> <p>Discussing the main issues (1)</p> <p><u>Elaborating the context</u></p> <p><i>Exemplifying aspects of context with a specific case</i></p> <p><i>Highlighting the local situation and its implications</i></p> <p><u>Problematising issues</u></p> <p><i>Explaining the problem (1)</i></p>

making changes their funding will allow and not the changes the animals need.

All animals within a zoo are the sole responsibility of the zoo management and it is incumbent upon the management to ensure that all legislated codes of animal welfare are strictly adhered to. All animals in their care should be treated with the utmost care and their welfare should be paramount at all times.

It is important to underscore here the blatant violations perpetrated by Saleng Zoo with hideous regularity. The compounds and court cases it has amassed over the years bear testimony to its many transgressions. A pharmacy without a license to sell medication is not a pharmacy. It is a drug cartel. It is therefore considered an illegal entity and is subject to punitive action. Saleng is no different. Saleng illegally acquired irreplaceable wildlife from our jungles and then crampled them into little cages for profit. As much as Saleng appeared to be running a legal zoo, it was in fact headlining a circus of criminal activities.

Hitherto the recent Saleng permit revocation, the intractable problem of PERHILITAN's habitual inaction painted a very poor picture of wildlife welfare in this country. Purging contempt on them would ordinarily be acceptable. PERHILITAN has characteristically been marked with sheer incompetence in dealing with zoo welfare. The length of time in which they took to finally revoke this flyblown zoo's permits is a concrete illustration of this. It is unclear whether objective considerations or political pandering prompted this permit revocation. Nonetheless, their decision to revoke Saleng's permits and remove all wildlife from their premises must be lauded. In fact, PERHILITAN should be pressured further into intensifying their crackdowns on errant zoos and expressly executing all welfare regulations immediately. It beggars belief that anyone who has since read the full tenor of Saleng's illegal activities would argue that Saleng did not deserve to be punished for their various infractions. And though Saleng now attempts to barter, beg and bellow its way back into PERHILITAN's good books, it is inconceivable that a zoo already besieged by countless compounds and complaints would continue to feign ignorance of its wrongdoings.

Of course, the inherent downside and primary concern about any zoo closure is where these animals would be banished to. This remains a genuine concern as Saleng is not an isolated case and is certainly not the only zoo with rampant problems of animal welfare violations. Hence transferring the animals from one concentration camp to another would negate the purpose of saving these animals. By supporting this move,

Elaborating the context

Relating to society and culture

Problematizing issues

Highlighting the associated dangers

Explaining the threats

Explaining the problem (2)

Promoting a change (1)

Advocating a proposition

Justifying the rationale

Discussing the main issues (2)

Problematizing an issue

Explaining the dilemma

<p>we may well be committing the very faults we are protesting against. The inevitable and deleterious effects associated with the confiscation and transportation of the animals is undeniable. We must accept with great difficulty that the animals, having lived in captivity, are now mostly domesticated and releasing them back into the wild is neither feasible nor acceptable. But permitting them to be under the care of seasoned offenders would post greater injustice. We categorically cannot be apathetic to such profound breaches of laws, ethics and humanity.</p> <p>But then we are stricken with the ugly, unavoidable truth that, given the condition of most zoos and pseudo sanctuaries in Malaysia, the closure of Saleng may result in unfavourable yet necessary actions. With little funding to relocate these animals, insufficient resources to assimilate them into new surroundings and fear of further abuse, we need to recognise that, sometimes, there is a legitimate need to euthanize animals. This would be one of them. And until a radical and evolutionary transformation takes place within our zoos, humane culling may well be our eventual solution.</p> <p>Destroying a healthy animal may seem an unspeakable wrong, but it comes from a solemn desire to ensure that no animal shall be condemned to a life more gruesome than death. [Graphic: Malayan tapir icon]</p> <p>Interdiscursive elements</p> <p>[Newspaper excerpt: “Complaints led to raid” – Photo: “New home: Malacca Zoo staff members carrying a sedated tiger, which was seized from Saleng Zoo earlier to a quarantine room on Tuesday.”]</p> <p>[Newspaper excerpt: “NGOs laud closure of zoo” – Photo: “Rescued: Officers from PERHILITAN removing a python during a raid at Saleng Zoo. (Inset) Some of the cages used to transport the animals that were seized.”]</p> <p>[Quote: “The greatness of a nation and its moral progress can be judged by the way its animals are treated”. – Mahatma Gandhi]</p> <p>(Shenaaz Khan, Malaysian Naturalist-Sep2011, p. 36-37)</p>	<p><i>Highlighting the associated risks/consequences/results</i></p> <p><i>Explaining the problem (3)</i></p> <p><u>Elaborating the context</u></p> <p><i>Relating to society and culture</i></p> <p>Promoting a change (2)</p> <p>Advocating a solution</p> <p>Justifying the rationale</p> <p>Ending with an impact</p> <p>Raising a thought-provoking statement</p> <p>Generalising a prosocial behaviour</p>
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Table 4.11: Findings of move analysis of an interpretive opinion article ("Just Closure").

Text from an interpretive conservation article (Mac 2012)	Moves/Sub-moves
<p>ENTER THE DRAGON: Err... What about the striped carnivore???</p> <p>TEXTS & IMAGE BY MELVIN GUMAL & SHENAAZ K.</p> <p>Humans, when they can afford the time and expense, try to rejuvenate themselves with life and hope when they go on a deserved vacation to usher in a new year. They also sometimes make New Year resolutions aimed at improving their lives or those of their loved ones. If we were tigers, we would probably have expected that the paramount Year of the Tiger, 2010, would have been one that increased hope for a better recovery of our species, especially when humans promised more funds for conservation, staff for our protection, as well as time and energy from just about every concerned human to prevent our demise.</p> <p>The Year of the Dragon will mean that two years have elapsed. Thus, does it mean that tigers would be relegated down the ladder of priority of conservation concerns or will we hope that the year of the mythical dragon will come to our rescue?</p> <p>Funds have not been limited in the Year of the Tiger or even in the following year. Staff, time and publicity on the species have also increased. In fact publicity in the local media on general news or the demise of tigers in 2010 was 583% more than that of the next iconic species, i.e. the elephant (91 media highlights for elephants as compared to 531 for tigers). In simplistic terms, why then has there been a potential decline in the number of tigers even after such concerted efforts, not just in Malaysia, but across the tiger-range countries? The probable reason is that efforts by poachers have also increased, much more so than our conservation efforts.</p> <p>According to some word-of-mouth sources, the black-market value of tigers is now more than double that of 2005, and this is largely due to increased demands for tigers or their products, coupled with increased scarcity of the animals. In recent tiger-centric conferences and meetings, it was announced that wild tigers have now largely disappeared from Cambodia and Vietnam, and are on the precipice in Myanmar and Laos. Meanwhile, wild tigers are under siege in Malaysia, Indonesia and parts of Thailand and India.</p> <p>The only places where tigers seem to be recovering are those with ample political will; adequate, committed and well-equipped staff, sufficient prey and habitats, focused funds, an</p>	<p>Announcing a topic/theme</p> <p>Creating an attractive title</p> <p>Giving credits to relevant sources</p> <p>Introducing the topic</p> <p>Creating an introductory narrative</p> <p>Discussing the main issues</p> <p><u>Problematizing an issue</u></p> <p><i>Explaining the problem (1)</i></p> <p><i>Supporting claims with statistical information</i></p> <p><i>Explaining the dilemma</i></p> <p><i>Highlighting the associated dangers/risks</i></p> <p><i>Explaining the threats</i></p> <p><u>Elaborating the context</u></p> <p><i>Exemplifying aspects of context with specific cases/settings</i></p> <p><i>Highlighting the local situation</i></p> <p><i>Relating to society and culture</i></p>

<p>educated and concerned public, and a judiciary that has good understanding of the importance of these animals, not just to our culture and identity, but to our pride – that we have the generosity as humans to want such a species to co-inhabit our lands. Some of these places are Nagarhole and Kaziranga National Parks in India and Huai Kha Khaeng Wildlife Sanctuary in Thailand. A philosophy in the approach taken by these national parks is that of ‘whatever it takes to protect’. This includes arming their rangers (with guns) as there are frequent shoot-outs with poachers, and long-term jail sentences for perpetrators. These two points should not be taken lightly or scoffed at, because non-Malaysian poachers in custody often repeat the statement ‘it is safer to poach in Malaysia as we do not get shot at, and we are seldom jailed’.</p>	<p><i>Exemplifying aspects of context with specific places</i></p> <p><i>Highlighting the local situation and its implications</i></p>
<p>The recent example of the ‘slap-on-the-wrist’ approach by the judiciary in Malaysia actually exemplifies this problem. In the past months of November and December 2011, two different groups of foreign poachers have merely been fined a maximum of RM 2,500 for illegally roaming in our protected areas and Permanent Reserved Forests and robbing us of our national treasures. They were not sentenced to a jail term, not even for a day. The Department of Wildlife and Forestry Department have done their jobs by catching these perpetrators. In some instances, they have presented their cases to our prosecutors to be taken to court, but the one weak link in our chain of defense has been the penalties or lack of will to prosecute. The amount of time taken to catch the poachers, lock them up in jails whilst awaiting custody and preparing the cases surely cost more than RM 2,500.</p>	<p><i>Exemplifying aspects of context with specific cases/settings</i></p> <p><i>Highlighting the local situation and its implications</i></p> <p><u>Problematizing an issue</u></p> <p><i>Explaining the problem (2)</i></p> <p><i>Highlighting the associated results</i></p>
<p>In January 2010, a man was sentenced to five years imprisonment for stealing 11 cans of Tiger beer and Guinness Stout (The Star, 20 Jan 2010, ‘Jobless man gets 5yrs for stealing some beer’). Another man was sentenced in March 2011 to five years in jail after being found asleep in a house which he broke into (The Associated Press, 2 Mar 2011, ‘5-year sentence for Malaysia burglar found napping’). More recently, on 3 January 2012, a man was jailed for a month for stealing two boxes of underwear worth RM30 (The Star, 4 Jan 2012, ‘Driver jailed for stealing undies’). Surely these criminal cases are far more trivial than, or at least at par with such wilful and purposeful intent to rape our nation of its treasures. Thus in the cases involving wildlife, one wonders who is negligent.</p>	<p><u>Elaborating the context</u></p> <p><i>Exemplifying aspects of context with specific cases/settings</i></p> <p><i>Making a comparison between context</i></p>

<p>The much lauded Wildlife Conservation Act (WCA) 2010 has failed to increase the sentencing trend for wildlife crime. When cases are indeed brought to court, the level of competence displayed by prosecutors is alarmingly poor. Many prosecutors are only vaguely familiar with laws pertaining to wildlife but appear unaware of the gravity of wildlife crime. Prosecutors have been known to fumble through citations, to the detriment of a case. And with WCA 2010's enhanced penalties, the accused are arming themselves with credible and knowledgeable defense lawyers. Anson Wong, the notorious wildlife trafficker who now sits in prison, he earned himself the right to appeal his 5-year sentence owing to the efforts of his defense lawyer who wowed the Court of Appeal judges. Unfortunately, the defense arguments were not challenged by the prosecution and glaring discrepancies were not addressed. Hence the lackluster performance of the prosecutors during the appeal hearing left the judges with little choice but to grant Wong the right to appeal.</p>	<p><u>Problematizing an issue</u></p> <p><i>Explaining the problem (3)</i></p> <p><i>Highlighting the associated risks/consequences</i></p> <p><i>Highlighting the associated dangers</i></p> <p><u>Elaborating the context</u></p> <p><i>Exemplifying aspects of context with a specific case</i></p>
<p>The Judiciary, similarly, while seemingly independent, defy the principles of law when sentencing wildlife-related-cases. Wong was an exception to the rule because Malaysia's image took a bashing with his petty initial sentence and the judge subsequently threw the full brunt of the law at him. But in most cases, judges appear indifferent towards wildlife crime, hence the questionable fines.</p>	<p><u>Problematizing an issue</u></p> <p><i>Explaining the problem (4)</i></p> <p><i>Highlighting the associated results</i></p> <p><i>Explaining the problem (5)</i></p> <p><i>Highlighting the associated results</i></p>
<p>Given the depleting number of tigers across the tiger-range countries, it is therefore imperative that we start implementing the 'whatever-it-takes' approach, especially when the poachers themselves are already taking such an approach, given some encounters with armed poachers in the field.</p>	<p>Promoting a change</p> <p>Advocating a solution</p> <p>Justifying the rationale</p>
<p>Sadly, unlike humans, tigers do not have the option of going on leave and rejuvenating their spirits and making resolutions for a better recovery of their population in the New Year. They are becoming a persecuted race when their numbers are depleting across the years and across their range. We humans have to give them their leave to relax and recover. If we do not, it will be a downhill race (pun intended) and our country will sooner join those in the dishonourable list of countries that once upon a time had tigers roaming their forests. Let us hope that 2022, the next Year of the Tiger will not be a year of the extinct (or by then, mythical) tiger, but instead a thriving one where we can roar with pride 'Enter the Recovered Tiger'. [Graphic: Malayan tapir icon]</p>	<p>Ending with an impact</p> <p>Raising some thought-provoking statements</p> <p>Generalising a prosocial behaviour</p> <p>Warning about a grim future if no action taken</p> <p>Expressing hope for a brighter future</p>

<p>Interdiscursive elements</p> <p>[Graphic: A Chinese zodiac wheel with tiger segment being highlighted]</p> <p>with</p> <p>[Text: “The lunar calendar already has one mythical animal. Let’s make sure the tiger doesn’t join the dragon in the realm of fantasy.”]</p> <p>[Graphic: A logo entitled “MYCAT WATCH: Malaysian Conservation Alliance for Tigers”]</p> <p>followed by</p> <p>[Column: “MYCAT is an alliance of the Malaysian Nature Society, TRAFFIC Southeast Asia, Wildlife Conservation Society – Malaysia Programme and WWF-Malaysia, supported by the Department of Wildlife and National Parks Peninsular Malaysia for joint implementation of the National Tiger Conservation Action Plan for Malaysia. www.malayantiger.net”]</p> <p>(Melvin G. & Shenaaz K., Malaysian Naturalist-Mac2012, p. 16-17)</p>	<p>Announcing a topic/theme</p> <p>Providing an interesting lead</p> <p><i>(Both graphic and text are located side-by-side to the title and lead description)</i></p>
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Table 4.12: Findings of move analysis of an interpretive conservation article ("Enter the dragon: Er... What about the striped carnivore?").

4.3.3.1 Brief descriptions of generic moves

Move 1: Announcing a topic/theme

This move is the most important part of the genre because it is where first words are read by the readers. It usually contains a title and a lead description that function to capture and attract reader's attention – this is precisely where artistic and creative short sentences or phrases motivate further reading. Mentioning the sources of text and images becomes a norm in genres that are placed in the context of a magazine such as MN.

- (58) **ENTER THE DRAGON**: Err... What about the striped carnivore?? (see Table 4.12)
- (59) Reptiles go extinct ... **Does it affect us?** (see Table 4.9)
- (60) Lee Grismer tries to **shed some light** to the **simple but pertinent** question of why the conservation of species from extinction is so important. (see Table 4.9)

Excerpt 4.6b: Examples of Move 1.

A title in the form of a question in (58) and (59) often attracts readers to engage in a query that resonates within their mind – this makes the title an attractive text. In addition, a familiar phrase such as “ENTER THE DRAGON” in (58) helps readers to relate the title to the famous Bruce Lee's martial arts film that was shown in 1973 and still remembered today. These are some examples of attractive titles that are created within this move. Meanwhile, in (60), the author uses metaphors like ‘shed some light’ to imply giving useful tips in addressing the question of extinction and conservation. The author also chooses a trailing phrase ‘simple but pertinent’ to make the lead description more interesting to read because the answers can be straightforward, yet they yield importance which is often overlooked.

Move 2: Introducing the topic

This move sets the stage for the topic that will be unfolded in the passage that follows. Most of the time, a narration is given in the form of a general statement, a recount of a

recent incident or happenings or an anecdote. Language formality is not necessary so readers can prepare their mind to absorb the first snippet of the topic with ease.

- (61) **ONCE**, WHILE GIVING A PUBLIC PRESENTATION on my work in Peninsular Malaysia; I highlighted a new species of frog ... (see Table 4.10)
- (62) AN EARLY SUN **WAS ALREADY WARMING** the shallow waters of the bay promising a hot day ahead. The dugong and her calf swam ... (see Table 4.9)

Excerpt 4.7: Examples of Move 2.

Temporal expressions in (61) and (62) in Move 2 may suggest a topic to begin from a particular time frame or space to help readers visualise or experience moments that are relevant to the main topic/theme that is being talked about. The lexical item ‘ONCE’ in (61) marks the beginning of an anecdote to warm-up the reader’s interest before the topic is presented. In (62), the past continuous sentence ‘was ... warming’ tries to describe the atmosphere at a particular time in the past – and it is a common way to narrate the tip of a tale/story (or topic) in fiction genres.

Move 3: Discussing the main issue(s)

We can consider this move to be the crux or the main content of the genre. Move 3 has a responsibility to put forth issues and problems that have to be explained to the readers who are assumed to be ignorant (sometimes) or are unaware of these issues and problems (indifferent). Hence, nature, environmental or conservation issues are usually explained by referring to the context of place, specific cases, settings and situations, as well as to the society and culture so readers may connect the world they lived in with the central issues that are affecting their realities.

- (63) They [the misguided individuals] **fail to understand** that zoo operators are only committed to making changes their funding will allow and not the changes the animals need ... All animals within a zoo are the **sole responsibility** of the zoo management ... All animals in their care should be treated with the utmost care and their **welfare should be paramount at all times**. (see Table 4.11)

(64) ... the **black-market** value of tigers is now more than double ... due to increased demands for tigers or their products... In **recent tiger-centric conferences and meetings**, it was announced that wild tigers have now largely disappeared from Cambodia and Vietnam... Meanwhile, wild tigers are **under siege in Malaysia** ... (see Table 4.12)

Excerpt 4.8: Examples of Move 3.

In (63), a problem was raised when some individuals have failed to realise what a zoo's genuine responsibility is all about. The context of the society is used within these lines to emphasise the importance of welfare and especially to the animals which are taken care of by the zoo management. Similarly, the black-market problem (64) is linked to specific settings and places including the local situation to express the dire situation of the tiger population. These two examples have shown that problems or issues in Move 3 are usually supported by sound explanations which are given in relation to the discussion of context.

Move 4: Promoting (a) change(s)

Move 4 is closely related to Move 3 because every problem needs solutions. Here, ideas and propositions are presented to the readers and hopefully, they will make a change to something. To persuade and convince readers to do that, rationale for advocating the change is expected. Reasoning that provokes readers to think and ponder works best in this move.

(65) ... if you don't want to, or don't know how to describe a species, **give them to someone** who does. Describing species is **not hard but** it may be too time consuming for many non-tenured people who need hypothesis-driven publications in top-tier journals. (see Table 4.10)

(66) **What is needed**, she believes, is top-down and bottom-up collaboration to help in conserving dugongs ... the dugong does not hunt or injure us, nor does it eat our crops ... compete for food with us or our animals ... **truly inoffensive**. (see Table 4.9)

Excerpt 4.9: Examples of Move 4.

Based on the examples in (65) and (66), the authors are trying to advocate some propositions that would benefit the process (conservation) and the dugongs (from being threatened). Justifications for advocating the changes are expressed in relation to the notions of ‘ease’ (65) and ‘innocence’ (66). These expressions may provoke readers to relate to these positive qualities in order to rationalise the function of Move 4.

Move 5: Ending with an impact

The last move is as important as Move 1 because it aims to deliver a message to the readers when the end of the text is reached. A successful provocation is essential to leave an impact on the readers – to be able to recall what the text talks about, the relevance of the topic to their interests and answers the ‘so-what’ questions through critical thinking. Ultimately, this move should inspire or entice the readers to learn more, think deeper and feel stronger about the topic/theme in question.

- (67) Destroying a healthy animal may seem an unspeakable wrong, but it comes from a solemn desire to ensure that no animal shall be condemned to a life more gruesome than death. (see Table 4.11)

(68) Let us hope that 2022, the next Year of the Tiger will not be a year of the extinct (or by then, mythical) tiger, but instead a thriving one where we can roar with pride ‘Enter the Recovered Tiger’. (see Table 4.12)

Excerpt 4.10: Examples of Move 5.

The verb ‘destroy’ used in (67) is a strong lexical choice that denotes a high degree of violence or an inhumane act that is ‘unspeakable wrong’, however a statement of justice (that accompanies the phrase) which compares between living and death may somehow contradicts the act – this kind of irony can provoke readers to think whether or not the act is necessary or controversial. Another example of Move 5 that creates an impact at the end anticipates a grim situation in the near future (68) that could also be a thriving version if hope exists – this form of ‘alternate’ realities is also effective in provoking the readers to think about the causal relationships they bear for the future.

4.3.3.2 Relationship patterns between generic moves

Overall, the proposed generic structure of interpretive genres in Table 4.8 contains moves that resemble the components in literary essays whereby emphasis is given on both narrative and descriptive writing (Lee & Allen, personal communication, 11 May 2012) in order to persuade readers to learn (awareness-building), think (understanding), feel (appreciation) and ultimately to act (protection) to conserve the natural and heritage legacy related to natural history. Therefore, in simple terms, we can group all the moves into common components of an essay-like structure that contains an introduction (Move 1 and 2), contents (Move 3) and conclusion (Move 4 and 5), but ‘interpretive genres’ has specific communicative purposes that are realised by selected individual moves.

Move 1 is seen to conform to the disciplinary norms in which the title, lead description and credits are necessary for any articles appearing within a magazine like MN for reading pleasure. An optional sub-move called ‘Describing natural history’ is seen to appear or used interchangeably in either Move 2 or Move 3 (see Table 4.9 and Table 4.10). This behaviour may also be influenced by the need to describe natural history in nature and conservation genres.

What is interesting about Move 3 and Move 4 is the emergence of sub-move pairs which I have termed them the ‘problem-context’ and ‘proposition-rationale’ pairs. These pairs seem to be expressed in a recursive manner and each pattern represents a particular issue or change within individual move structures. The ‘problem-context’ pair that is prevalent in Table 4.9 clearly demonstrates this behaviour and the reason behind it could be motivated by the author’s intention to situate every problem/issue discussed to a particular context (place, settings, cases, situations, the society or culture) that is appropriate and relevant to the matter. A brief summary of ‘problem-context’ pairs is also presented in the nature article (dugong) which is unexpected, but the aggregated

sub-moves in Move 3 serve as a summary to re-emphasise all the main issues that are at stake to the readers.

Similarly, the 'proposition-rationale' pair is also present in Move 4. Sub-moves of Move 4 are reiterated in a recursive pattern for every solution/idea proposed (see Table 4.10 and Table 4.11). Each pair seems to serve as a response to a particular problem that was explained in Move 3. In an isolated case of the opinion article (zoo), this move was interjected in Move 3, which is acceptable because this sub-genre could be displaying subtle differences in comparison with other sub-genres of nature and conservation articles. It can also be explained by the variations in the author's preference or style he/she chose to adopt for the opinion article. Lastly, Move 5 leverages on the scaffolds built by all the preceding moves after Move 1 to deliver an impactful message to the readers. The provocation and elicitation for prosocial behaviours which are realised by sub-moves of Move 5 mirror the practices of interpretation and interpretive writing; hence, Move 5 is essential in 'interpretive genres'.

Generally, the proposed generic move-structure can be applied to any members of the colony (interpretive genres) that are related to natural history (nature, conservation, the environment) because these genres are assumed to deliver the principles of interpretation and most likely, they employ the strategies/techniques of interpretive writing. Nonetheless, it is important to note that some degree of flexibility is expected from the proposed model because distinct genres may display subtle differences at different levels of generalisation (see Figure 4.5), yet share similar communicative purposes with closely related genres grouped within the colony of 'interpretive genres'.

4.4 SOCIO-COGNITIVE ASPECTS OF GENRE INTEGRITY

We have looked at patterns of genre composition and generic structures in the previous section. Now, we will revisit ‘interpretive genres’ from a socio-cognitive perspective. This orientation requires an understanding that generic integrity of ‘interpretive genres’ is part of some socio-cognitive aspects that influence the construction, interpretation and use of genres in the discourse community situated within the context of natural history.

The shaping of interpretive genres and its integrity (see Figure 4.6) requires appropriate specification of generic values (narrative, descriptive, persuasive, information, provocative and emotive) that are capable of realising specific combinations of communicative purposes of the colony. In addition, several closely related socio-cognitive aspects such as disciplinary culture, professional practices/culture, and discursive practices/procedures also interact with patterns of communication (communicative purposes based on the principles of interpretation) and patterns of genre constructions (generic integrity) to mould text types into genres. In other words, interpretive genres and its typical construction are functions of genre integrity based on conventions and rhetorical acts that realises specific communicative purposes, and the socio-cognitive aspects that introduce tactical constraints and implications to the standardised constructs of the genre colony. It is important to note that ‘provocative’ and ‘emotive’ (both highlighted in bold in Figure 4.6) are unique to the colony of interpretive genres and only two socio-cognitive aspects are explored in this research i.e. the disciplinary culture and professional practices in natural history.

4.4.1 Malaysian Naturalist: Disciplinary culture of natural history

Disciplinary culture of natural history is a context where ‘interpretive genres’ is placed within. Generic integrity of the colony members is part of the discursive practices, discursive procedures and professional practices within disciplinary culture. Constraints

of disciplinary culture govern the construction, use and interpretation of genres grouped in this colony.

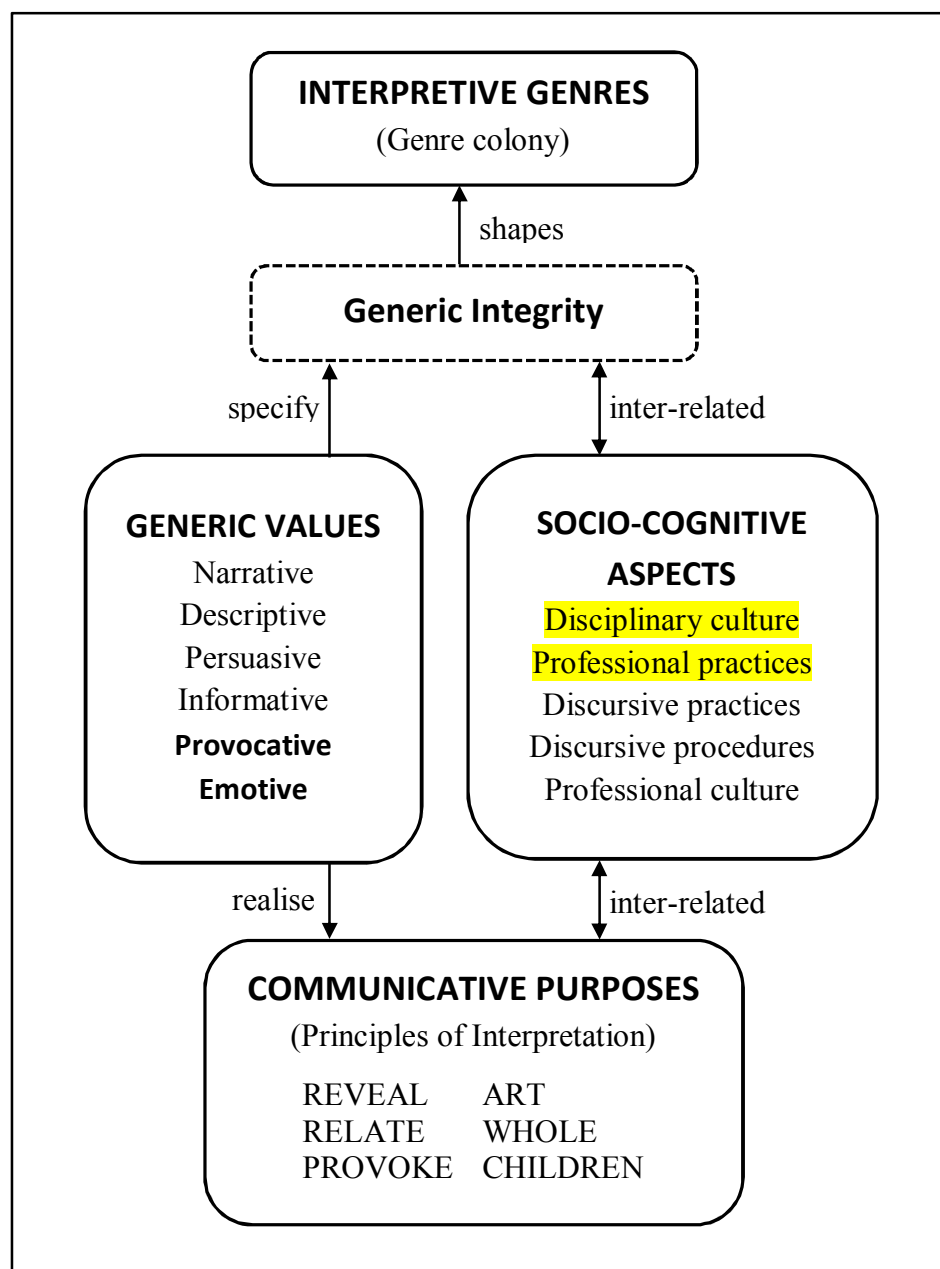


Figure 4.6: Generic integrity of interpretive genres and the socio-cognitive aspects.

4.4.1.1 Generic norms and conventions

Generic norms and conventions are ‘behavioural principles’ (Bhatia, 2004) that most natural history professionals and practitioners practice or observe when they contribute their knowledge and experience through genres in the discourse community. The following traditions of natural history have been found in the context of MN:-

- *Giving credits to authors and photograph contributors* – a common practice in magazine articles and especially relevant for nature/conservation-related genres to acknowledge contribution of volunteer writers/photographers who are passionate about natural history

- *Expressing thanks in the ‘Acknowledgments’ sub-genre* (see Figure 4.7)

In nature/conservation project articles, acknowledgments are usually placed at the end of the text to honour or thank parties who have helped the author in his/her research or project, either directly (funding) or indirectly (contribution of time/help). This norm overlaps with research genres of grant reports/publications and has been a courtesy of the nature and conservation society.

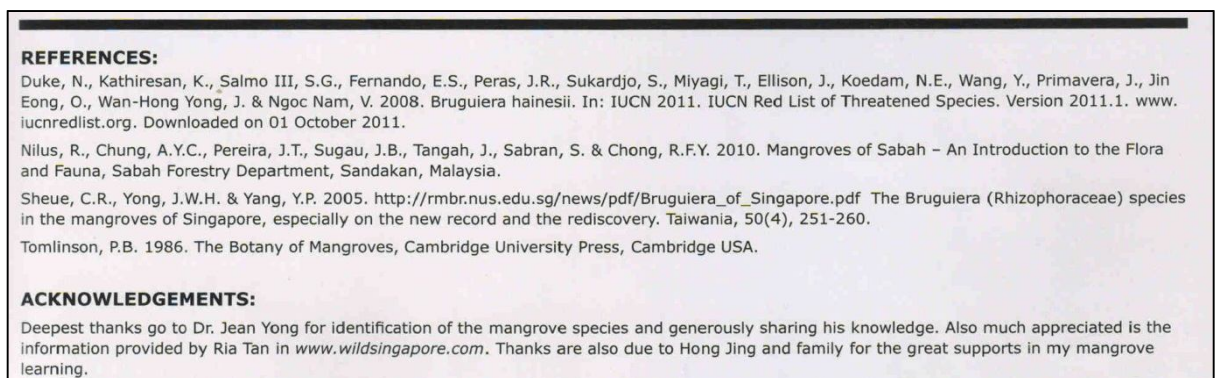


Figure 4.7: Examples of References and Acknowledgments in Malaysian Naturalist-Dec 2011 (p.35).

- *‘References’ and ‘Bibliography’ sub-genres* (see Figure 4.7)

These academic text forms are conventions for scientific and science writing, which are fundamental to the field, though they are optional and usually placed at the end of texts by naturalists, scientists and academicians. They provide credibility to the facts, findings and identification of natural elements presented within the writings of a genre in question. Sometimes, footnotes are included as well.

- *Intertextuality and taxonomic names*

Scientific naming of species is pervasive in natural history and normally consists of binomials in Latin and/or Greek languages to identify the genus (family) and distinct name of a particular species according to modern and scientific classification taxonomy introduced by Carl Linnaeus. In-text citations also contribute to the inter-textual relationships between genres and other related primary resources mentioned in the References. The high frequency (69) of inter-textual elements (both scientific naming and in-text citations) is possibly due to the intricate connections natural history has with the Natural Sciences.

(69) The presence of gastropods (*Thais sp.* and *Nerita sp.*) can be observed at the inter-tidal zones with rocky shores and *Ocypodid* crabs on sandy shores. Aishah et al (2005) recorded 106 phytoplankton species, mostly *Bacterastrium*, *Biddulphia*, ... The coastal waters in Langkawi are generally turbid and have high sedimentation rates (Johnsson, 2002) ... they [the fisherman] also fish seasonally for pomfrets (*Pampus sp.*, bawal) and for squid (*Loligo sp.*, sotong). The commercial and other marine fishes caught by artisanal fishermen ... listed as: *Stoplephorus sp.*, *Johnius sp.*, ... occasional push-net activities for landing udang belacan (*Acetes sp.*) ... the fishermen do catch mangrove crabs, *Scylla serrata*.

(Nather Khan Ibrahim, Harinder Rai Singh and Firuza Begham Mustafa,
“The Coastal Resources of Pantai Cenang, Langkawi” [Malaysian Naturalist-Dec2011], p.20-23)

Excerpt 4.11: Intertextuality in natural history.

- *Origin of names*

In natural history discourse, it is also common to find descriptions about the origin of species names and the etymological influences on naming according to the attributes or nature of something in the human world, and sometimes in myth, legend or folklores. See Excerpt 4.12 for examples – these relate to the readers and attract them to think about the species who names have close resemblance.

- (70) The common name ‘dugong’ comes from the Malay “duyong” meaning lady of the sea. Although their scientific name “Sirenia” comes from the Greek *seiren* (seductive sea nymphs), they should be more appropriately be considered “mothers of the sea” than mermaids.
- (Ashleigh Seow, “Death of a Mermaid” [Malaysian Naturalist-Jun2011], p. 28-31)
- (71) One of the prized little climbers of the legume is the genus *Clitoria* and it has its place ... produces bluish flowers, with its structures resembling the clitoris of the female reproduction organ, hence the name.
- (Chiam Kok Heng, “Fairchild and the *Clitoria* named after him” [Malaysian Naturalist-Sep2011], p. 12-14)
- (72) The English name “Shama” is derived from a Hindi term meaning “song bird”, while in Malay, it is called Murai Batu or Murai Hutan due to its affinity for forested areas ...
- (Nurul Bariyah Babu, “White-Rumped Shama” [Malaysian Naturalist-Mac2012], p. 46-47)

Excerpt 4.12: Examples of naming conventions in natural history.

■ *Association with various discourses*

Being interdisciplinary, natural history genres often interject and mix with other discourses to emphasise the ecological relationships between human and the non-human world. Professional discourses are combined with natural descriptions to establish credibility, relevance and the need for inter-disciplinary connections.

- (73) The White-Rumped Shama is Protected in Malaysia ... Wildlife Conservation Act 2010... Section 60. (1) Hunting or keeping ... Maximum RM 50,000 or two years jail...
- (Nurul Bariyah Babu, “White-Rumped Shama” [Malaysian Naturalist-Mac2012], p. 46-47)
- (74) Recent studies have also indicated its medicinal potential. It contains the flavonoid quercertine which can help reduce blood pressure as well as upper respiratory tract infection common among cyclists. The blue flower produces ternatin, an anti-inflammatory and robinin, a type of antioxidant.
- (Chiam Kok Heng, “Fairchild and the *Clitoria* named after him” [Malaysian Naturalist-Sep2011], p. 12-14)

- (75) Polystyrene and styrofoam products ... present an environmental hazard. It is precisely because of its lightness that polystyrene products end up becoming litter. Carried by wind and water ... end up in oceans, waterways and the digestive tracts of animals.
(Wong Ee Lynn, "No! To polystyrene at the National Zoo" [Malaysian Naturalist-Mac2012], p. 10-11)
- (76) ... distributed posters on better management practices (BMPs) for reducing human-wildlife conflicts in plantations ... practising BMPs such as going into plantations in groups, making a lot of noise ... clearing shrubs ... reduce encounters with wild tigers.
(Sara Sukor, "NO FREE LUNCH" [Malaysian Naturalist-Mac2011], p. 10-11)

Excerpt 4.13: Contributing genres (interdiscursivity) in MN.

From Excerpt 4.13 and other examples in MN, we can observe how other discourses are combined with nature-related genres to provide a holistic view of the topic in question. For example, discourses of science (69), tourism (36), legal (73), medicine (74), the environment (75) and management (76) have been shown in different cases.

In summary, norms and generic conventions in natural history are closely related to politeness (expressions of thanks and acknowledgments), academic intertextuality (references, scientific naming), origin of names (etymology and similes) and interdiscursivity (interdisciplinary discourses/genres) in the context of MN.

4.4.1.2 Professional goals and objectives

The following statement reads in every issue of MN and it gives an overview of MNS in the very first pages that readers will see:

"The Malaysian Nature Society is the oldest environmental NGO in Malaysia, playing a vital an active role in the appreciation and conservation of our natural heritage for over half a century. MNS' main role is conservation, advocacy and outreach. To find out more, visit our website www.mns.my"

In addition, MNS mission “*To promote the conservation of Malaysia’s natural heritage*” is placed at the last page before the back matter of the Naturalist magazine.

From the mission statement and the brief description about MNS in the above, we clearly see how professional goals and objectives of the organisation are intertwined with the content and genres of natural history. Being an established entity in the local context (implied by ‘the oldest environmental NGO’ and ‘over half a century’), its publication and products are assumed to have high quality contents and credibility in the discourse community. Nevertheless, the mention of ‘natural heritage’ clearly indicates MNS’ efforts in promoting education, learning and literacy of natural history and the environment. Such aims can only be achieved by executing the roles to ‘outreach’ the public, generate awareness and ‘appreciation’ of the nation’s natural legacy by ‘advocacy’ of ‘conservation’ efforts and actions with participation from the society.

The intricacy of professional goals and objectives of MNS determines the validity and appropriateness of genres (including interpretive genres) that are included in MN – hence, the emphasis is given to articles on nature (about fauna, flora and geology), conservation and articles about people (see Figure 4.3). Moreover, the content of these genres is tailored to meet the roles and objectives of the organisation which is to communicate conservation messages (through natural history) to the readers.

At the preface in MN lies a statement that is quite interesting as it relates to the goals and objectives of MNS in an indirect manner. It reads like the following:

“It is also the responsibility of authors to ensure information they submit is accurate. The opinions expressed in this magazine are those of the author and not necessarily those of MNS.”

At a first glimpse of the above, one may view it like some sort of a disclaimer-like message to safe guard the interest of MNS as well as the responsibility that accompanies genres or materials published in MN. Since MNS does invite contributors to share their

natural history-based stories, ideas and photographs on a voluntary basis, these genres may carry the opinions or aims intended by the authors/contributors and may not be of MNS. So, this system may cause conflict between both parties and this explains why a statement of responsibility is necessary.

One of the professional goals of MNS is to advocate conservation that requires an outreach approach – hence, contributors from all sorts of life are invited to participate in genre production. For this purpose, non-conventional or hybrid genres related to natural history such as articles of tourism and travel, news and events, photos, reviews, letters and posters (see Figure 4.3) are introduced in MN. It is not true to assume that these genres do not subscribe to the professional goals and objectives of MNS based on the responsibility statement mentioned earlier.

MNS, at its best efforts does rectify any inconsistencies in terms of accuracy of information through a sub-genre known as erratum (see Excerpt 4.3). It appears that all published genres of MN do relate to natural history and the generic integrity of these genres often reflects the roles that MNS have stated in its introductory and mission statements. A ‘negotiation’ space seems to exist within the overlapping relationships between the contributors’ interests and the professional objectives/goals of the organisation. It can be surmised that genres found in MN should be the products that satisfy the mission of MNS and its roles (true for the corpus of this research), but with some degree of flexibility in the composition of its content, in order to encourage public participation and reception through outreach and advocacy. This assumption does not nullify the responsibility statement but provides a lenient comfort to the construction, use and interpretation of genres in MN.

4.4.1.3 Professional and organisational identity

Genre conventions and norms discussed in the previous section have given rise to the various identities (both professional and organisational) that are reflected by most

genres in natural history. These different identities have existed simultaneously in harmony within the discourses that are found in MN.

- *Professional identities*

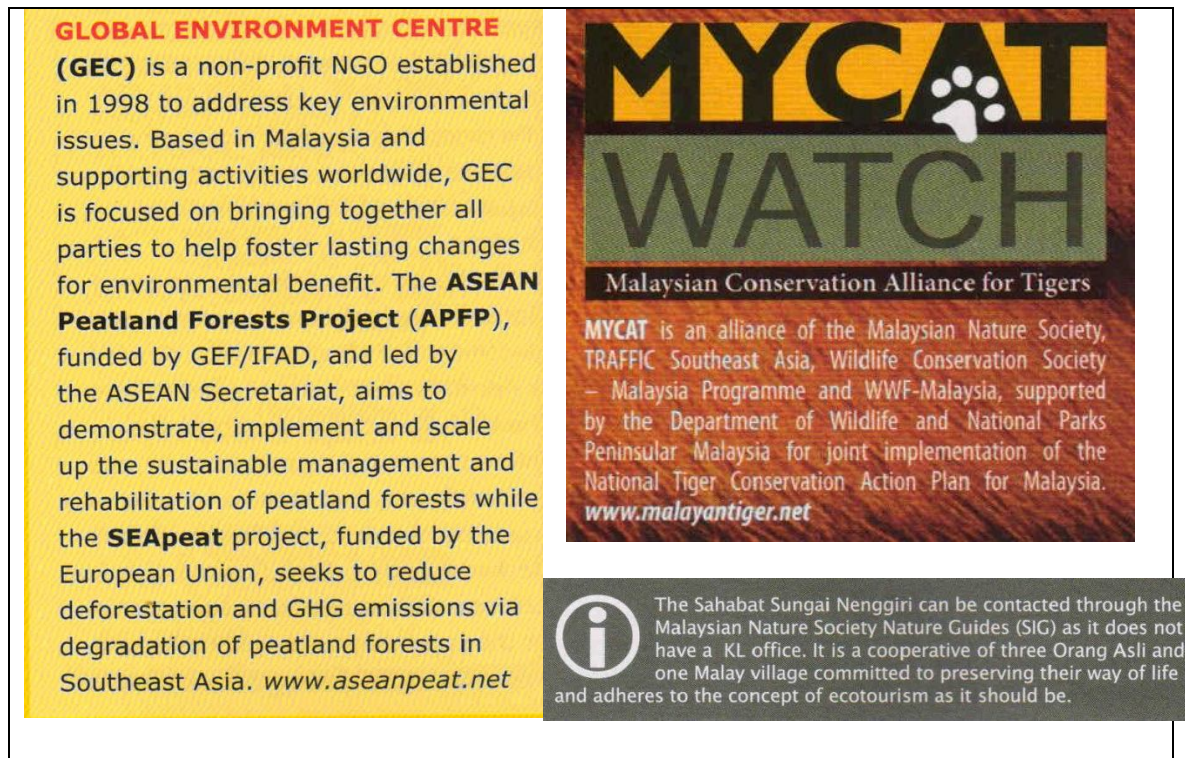


Figure 4.8: Professional identities of conservation NGOs
(Left: MN-Sep2011, Top-right: MN-Mac2012, Bottom-right: MN-Dec2010).

In Figure 4.8, conservation bodies such as GEC, MYCAT and The *Sahabat Sungai Nenggiri* establishes their professional presence within the discourse by providing a brief description about themselves and the particular disciplinary community they belongs to i.e. a mangrove conservation NGO, tiger conservation NGO and ecotourism community respectively. These sub-genres recur in conservation reports and NGO activities/achievements related to natural history.

- *Organisational identities*

The Malayan tapir, a threatened species, is depicted in a symbolic logo representing the entity of MNS. It is the perfect icon because it concerns natural heritage (a mammal that deserves conservation) of Malaysia and has a profound

impact to anyone/anything that bears the logo – it is an organisational identity that's unique and meaningful to the MNS community and the world beyond.

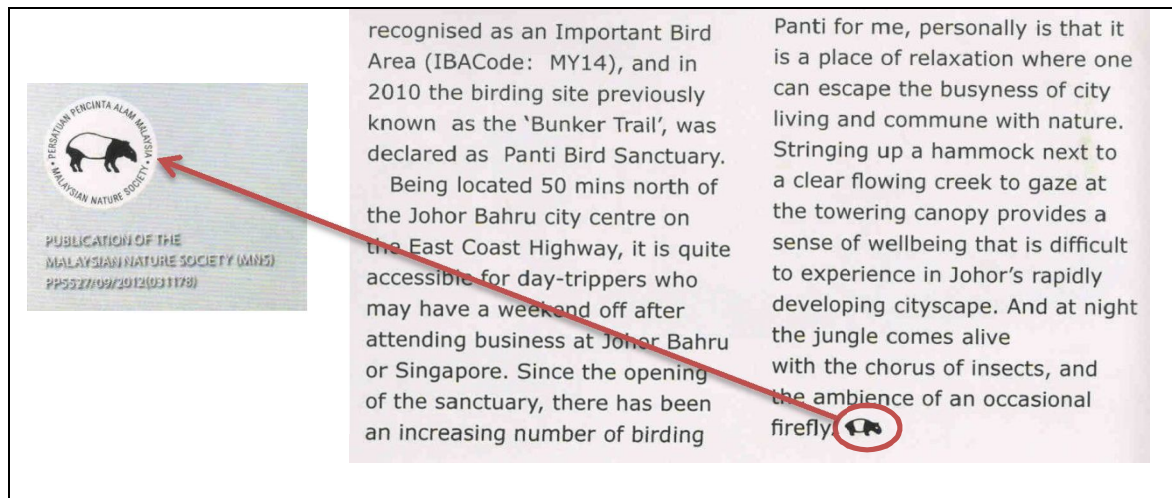


Figure 4.9: Organisational identity of MNS in MN (Left: Cover page of MN-Mac2012, Right: MN-Dec2011).

As shown in Figure 4.9, a little icon of the Malayan tapir can be seen everywhere within MN and is usually placed at the end of texts/genres. Symbolically, it serves to mark the end of an article/genre, but at the same time, the organisational identity of MNS is constantly being reflected at every page to remind readers of the significance of conservation of natural heritage of the nation (such as the tapir). The deliberate placement of a symbolic icon plays a pragmatic role that redefines the nature and purpose of the genre with the roles played by the organisation reflected by it.

- *Social identities*

The social identities of MNS that are present in the genres of MN are defined by the affiliations and partnership the organisation has established with various organisational bodies, both internal (supporters and corporate membership) and external (international partners and membership – represented by symbolic icons i.e. logos and texts).

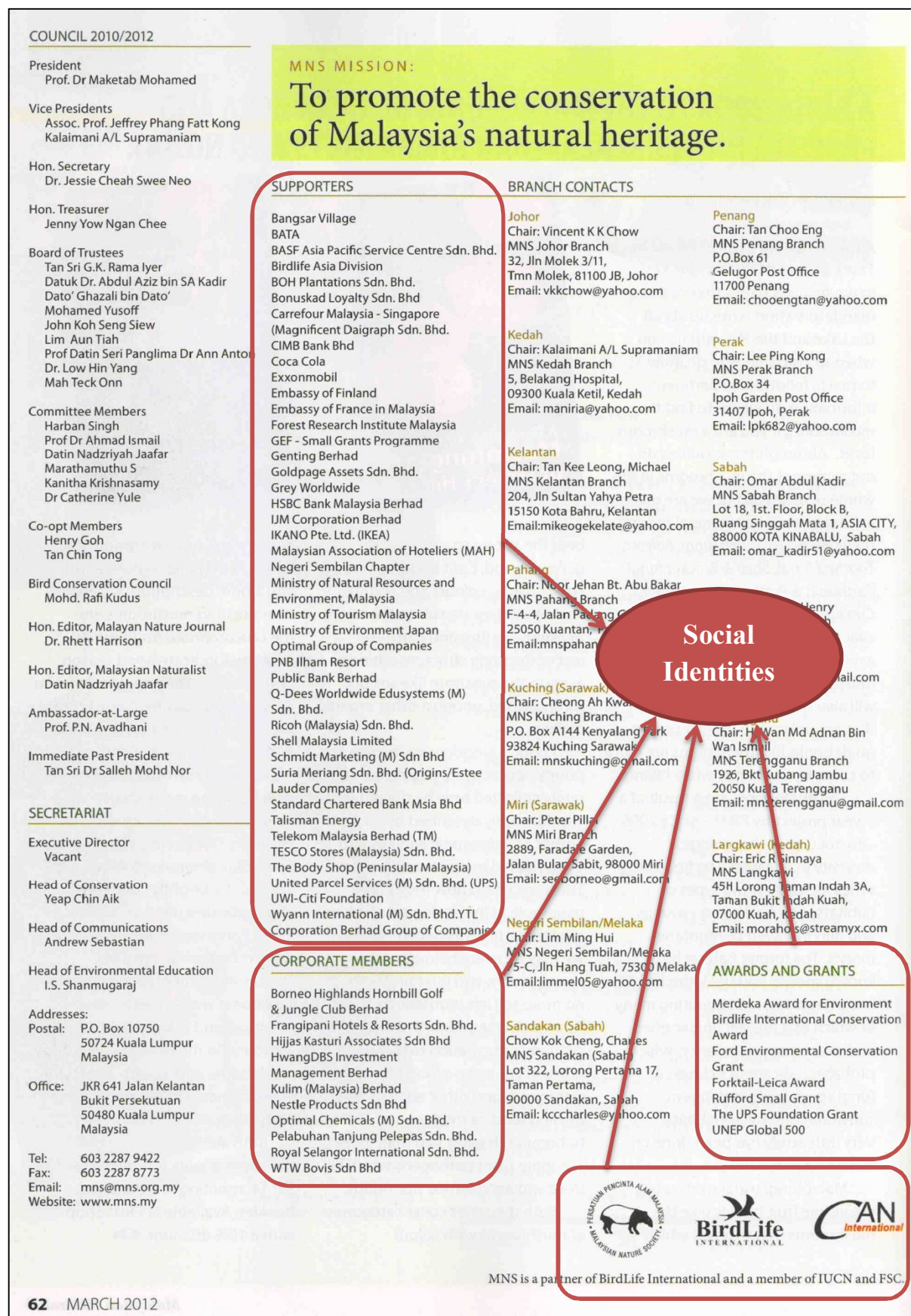


Figure 4.10: Social identities defined in the context of MN (Last page behind the back matter).

For example (see Figure 4.10), genres that reflect the membership of MNS with other social groups have taken the form of outdoor product advertisements (Bata), advertorials on efficient fuel energy (Shell) and the ‘Save Temenggor’ campaign (with Body Shop). Supporters of MNS co-construct MNS’ social identities and these bodies may have some influence on the construction of genres for MN. Likewise, the awards and grants obtained by MNS shapes the social identity of the organisation as recognised by members in the society. Genres in MN also reflect international partnerships through discourses contributed by external collaborators such as the International Union for Conservation of Nature (IUCN) and the Birdlife International alliance.

- *Individual identities*

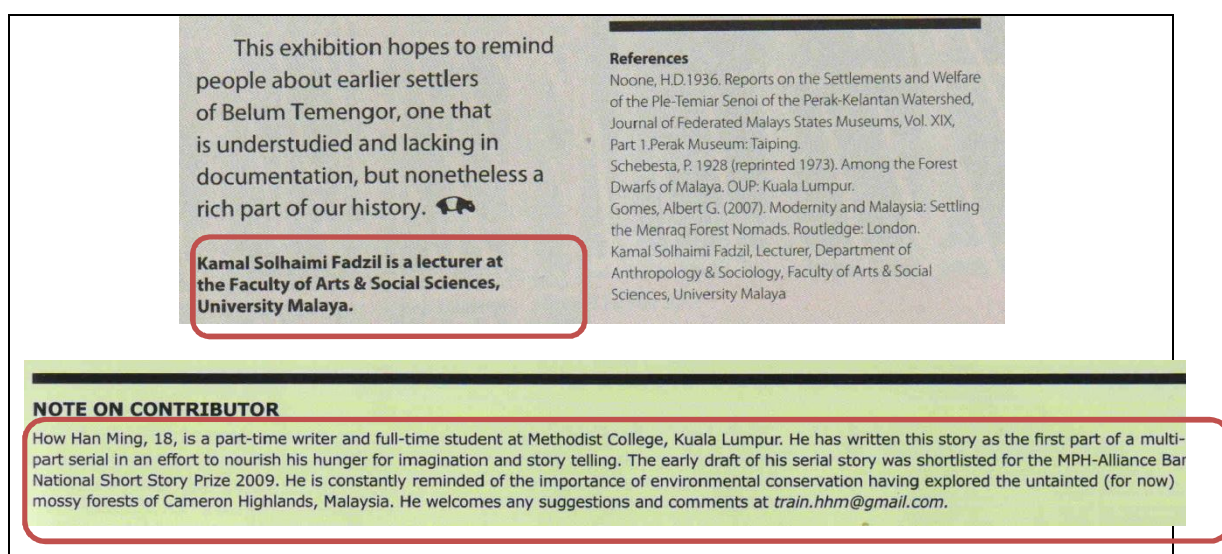


Figure 4.11: Individual identities of authors/contributors in MN (Top: Mac-2013, Bottom: Dec-2011).

Figure 4.11 illustrates some sub-genres which are occasionally found in MN. A note on contributor or a brief biography of the author represents the individual identities and indication of self-expressions by the respective text producers. The functions of social identities in natural history genres may be arbitrary – e.g., to introduce a potential authorship (in the case of How Han Ming), an invitation for research collaboration or a credibility presentation (in the case of Kamal Solhaimi), etc.

Negotiations between these four different kinds of identities may be necessary if conflicts arise or when generic integrity is compromised or colonised. However, they seem to be working in tandem within genres of MN (as shown in the previous examples) and a possible explanation to this could be the nature and culture of natural history which practice harmony and ecological connections between genres, and professional and organisational identities.

4.4.2 Malaysian Naturalist: Professional practices in natural history

The practice of the professions in natural history has direct implications and influences in the construction of genres because the ways professional activities are managed can be reflected in the discourses used by the professionals and practitioners in the field. Several common professional practices in natural history have been identified from the context of MN and they are explained in the following sections.

4.4.2.1 The practice of nature/environmental interpretation

Application of the principles of interpretation has been the core practice in natural history for nature/environment interpreters to educate and communicate meaningful relationships between the natural elements (objects of an interpretation) and the audience's interests rather than just giving factual information only (Tilden, 1957). Looking from this point of view, interpretive genres in MN have been analysed in terms of the realisation of these principles in their construction, interpretation and use in the natural history discourse community. Exemplars derived from the analysis are grouped by individual principles that constitute the practice of nature/environmental interpretation.

The 'RELATE' principle as a professional practice

- (77) Reptiles Go Extinct ... Does It Affect **Us**? (see Table 4.10)
- (78) ... why **bluefin tuna** should be protected ... These are beautiful fish ... incredible capabilities for accelerating ... no bearing whatsoever on why this species should be protected. Using that line of reasoning we should never have let Mercedes-Benz stop production of the **300 SL in 1958** nor allowed Chevrolet to let the **Corvette Stingray** go extinct in **1968** – arguably the most beautiful, high-performance sports cars of their time with amazing acceleration. (see Table 4.10)
- (79) ... to **set aside a protected area** and fail to take the opportunity to figure out how it works ... tantamount to building a **library** to read ... thumbing through the pages of the species in our natural libraries ... ecosystems. Peninsular Malaysia is just such a **library**. (see Table 4.10)
- (80) The mother ... rest and **touched her calf with her flipper as it nursed**. (see Table 4.9)
- (81) ... the whine of the propellers ... it was too late for the calf – the spinning blades slashed its back; **the blood a crimson bloom staining the blue-green sea**. (see Table 4.9)
- (82) The **lunar calendar** already has one mythical animal. Let's make sure the tiger doesn't join the **dragon** in the **realm of fantasy**. (see Table 4.12)
- (83) these criminal cases are far more trivial than, or at least at par with such wilful and purposeful intent **to rape our nation of its treasures** (see Table 4.12)
- (84) Sadly, unlike humans, tigers do not have the option of **going on leave and rejuvenating their spirits and making resolutions** for a better recovery of their population in the New Year. (see Table 4.12)

Excerpt 4.14: The practice of 'RELATE' principle in natural history.

This practice connects the interpretation of resources to the reader's self-expressions through pronouns such as 'us' and 'our', which are both inclusive in (77) and (83). To further capture reader's attention, relevance is established by:

- Comparisons of beauty between blue-fin tuna and stylish vintage cars of the past (78)
- Similarity of places/items in the human world i.e. a library (79) and a lunar calendar (82)

- Similarity of emotional feelings experienced by humans – mother’s love (80), and the meaning of being alive and pain (81)
- Mention of items/artefacts/needs of value to humans e.g. national treasures (83) and holidays/vacations (84)

These examples clearly indicate a practice in natural history that makes interpretation relevant and meaningful to the readers’ thorough understanding of their intimate knowledge and experience.

The ‘REVEAL’ principle as a professional practice

- (85) Living in shallow coastal waters the short-sighted dugongs are very **vulnerable** to boat strike especially from fast boats ... can drag the almost neutrally buoyant dugong into the propellers ... I can relate how **stressful** it is when large boats move ... above you and turbulence threatens to pull you up into the blades. **Us divers can add more lead on our weight belts; the dugong cannot.** (see Table 4.9)
- (86) ... places where tigers seem to be recovering ... ample political will; ...committed and well-equipped staff, sufficient prey and habitats, focused funds, an educated and concerned public, and a judiciary that has **good understanding of the importance** of these animals, not just to our culture and identity, but to **our pride** – that we have the **generosity** as humans to want such a species to **co-inhabit our lands.** (see Table 4.12)
- (87) The **contention by some** that the zoo had not infringed any laws was **beyond absurd.** Amongst Saleng’s catalogue of crimes were 19 tiger cub carcasses chucked in a freezer, numerous permit violations... illegal sale of wildlife, and **most pressing** being the deplorable conditions in which many of these animals were made to live in. (see Table 4.11)
- (88) ... accept with great difficulty that the **animals** ... in captivity ... domesticated and **releasing** them **back into the wild** is **neither feasible nor acceptable.** But permitting them to be under the care of seasoned offenders would post **greater injustice** ... cannot be apathetic to such **profound breaches** of laws, ethics and humanity. (see Table 4.11)

Excerpt 4.15: The practice of ‘REVEAL’ principle in natural history.

The practice of revealing meanings or relationships behind the scene requires information for support and as a foundation to construct a reality according to the reader's understanding so they can make personal meanings beyond the ordinary facts they read within genres.

In example (85), the threat that dugongs face relate to the stressful experience one might feel when he/she emphasizes the dugong. To make matters worse, such threats are intensified when viewed from the dugong's position because it has no any other ways to remedy the stress unlike in the divers' position. Thus, this reveals how threatening boat strikes are to dugongs and also to the divers but the former deserves more protection than the latter. Similarly, revelation of meanings through reasoning (86) and justification (87) are commonly found in interpretive genres to demystify any favourable (the effectiveness of tiger conservation) or despicable (abuse of animals) situations/cases related to natural history.

Other forms of discourse that may reveal inner meanings or relationships through reader's understanding include the practice of explaining the laws of nature and questioning the possible solution(s) with morale and ethical values. For example, readers are encouraged to construct additional meanings themselves by understanding the rationale of why captive animals may not survive in the wild once they have been domesticated (88) and whether the decision to keep them is viable or not through an evaluation based on human values.

In all of these examples, this practice guides and facilitates reader to create their own understanding of a particular matter so they can reveal inner meanings of it based on accurate and comprehensive information received by them through genres they read.

The 'PROVOKE' principle as a professional practice

- (89) “every species is unique and it deserves protection, we don’t yet know what its potential benefits to humanity are and that every species is part of a large puzzle composing the ecosystem.” – true, but generally unsatisfying long-term answers to a general public that has real, short-term problems and concerns. (see Table 4.10)
- (90) I find it disturbing that we are the only species on the planet that purposely destroys its habitat, all the while knowing that this will ultimately lead to our own demise. And we’re supposed to be the smart ones? (see Table 4.10)
- (91) It is ironic that dugongs and other animals that are part of the cultural history of Asia are found wild in Australia in tens of thousands when they are rare in most parts of Asia. (see Table 4.9)
- (92) Almost alone amongst mammals, the dugong does not hunt or injure us, nor does it ... transmit deadly diseases to us and the like. Even the charismatic dolphin competes with us for fish and has been known to be aggressive to humans at times. The dugong is truly inoffensive. (see Table 4.9)
- (93) Surely these criminal cases are far more trivial than, or at least at par with such wilful and purposeful intent to rape our nation of its treasures. Thus in the cases involving wildlife, one wonders who is negligent. (see Table 4.12)
- (94) We humans have to give them their leave to relax and recover. If we do not, it will be a downhill race (pun intended) and our country will sooner join those in the dishonourable list of countries that once upon a time had tigers roaming their forests. (see Table 4.12)
- (95) Destroying a healthy animal may seem an unspeakable wrong, but it comes from a solemn desire to ensure that no animal shall be condemned to a life more gruesome than death. (see Table 4.11)

Excerpt 4.16: The practice of ‘PROVOKE’ principle in natural history.

The practice of provocation in natural history is essential to stimulate readers to think and ponder deeply on the implications, new possibilities and new beliefs of something related to nature. Readers may be provoked by ironic statements (89, 90, 91, 92, 95), comparisons (91, 92), indication of blame (93) and sometimes, through the projection of

a grim future (94). It is also possible that provocation in these forms may inspire or trigger a passion in readers so they may satisfy their deepest desires to learn more of the natural history of an animal, plant, etc. For example in (92), dugongs may be one of the tamest and friendliest mammals of the sea by which ordinary readers would not have known it until dugongs are compared with dolphins – this is a provocation that may potentially influence the readers’ interests and their passion for dugongs upon their contact with this practice.

The ‘ART’ principle as a professional practice

- (96) Dugong populations either starved or migrated in search of **greener pastures**. (see Table 4.9)
- (97) The trawl comes remorselessly ripping up coral and sea grass **like a bulldozer in a forest**. (see Table 4.9)
- (98) ENTER THE DRAGON: Err... **What about the striped carnivore???** (see Table 4.12)
- (99) **If we were tigers**, we would probably have expected that the paramount Year of the Tiger, 2010, would have been one that increased hope for a better recovery of our species (see Table 4.12)
- (100) A philosophy in the approach taken by these national parks is that of **‘whatever it takes to protect’**. (see Table 4.12)
- (101) Hence the **lackluster** performance of the prosecutors during the appeal hearing left the judges with little choice but to grant Wong the right to appeal. (see Table 4.12)
- (102) “The greatness of a nation and its moral progress can be judged by the way its animals are treated”. – Mahatma Gandhi (see Table 4.11)
- (103) **Just** Closure (see Table 4.11)
- (104) A **pharmacy** without a license to sell medication is not a pharmacy. It is a drug cartel. It is therefore considered an illegal entity and is subject to punitive action ... As much as Saleng appeared to be running a legal zoo, it was in fact headlining a **circus of criminal activities**. (see Table 4.11)
- (105) And though Saleng now attempts to barter, beg and bellow its way back into PERHILITAN’s **good books**, it is inconceivable that a zoo already besieged by countless compounds... (see Table 4.11)

(106) If we knowingly let the little frog on the top of the mountain go extinct then we are sending a clear, unmistakable message saying that it is acceptable to let some species die out. This is a slippery slope on which we dare not tread. (see Table 4.9)

Excerpt 4.17: The practice of ‘ART’ principle in natural history.

Artistic expressions of resources which are being interpreted within genres are a powerful mechanism to deliver natural history to the readers. Such a practice tries to compel the readers to experience a spellbinding and captivating effect by means of metaphors (100, 105, 106), idioms (96), similes (97), analogies (104), famous quotes (102), questions (98) and assumptions (99). Sometimes, wordplay is also used to inject creativity and variation in styles to a story such as (101) and (103). The lexical item ‘Just’ in a title (103) can take either the verb or noun form. The metaphor ‘slippery slope’ (106) is also an artistic choice used by the author to provoke readers through an argument of logical fallacy where a simple small step (or mistake) may lead to a chain of related events with significant impact/effect.

The ‘WHOLE’ principle as a professional practice

This practice is common in literary writing and storytelling. It requires a story to be told in a holistic approach where all interconnected parts are unified together to form a theme in natural history. This principle forms the basic structure of interpretive genres which has a beginning, middle and an end – this has been discussed in the move-structure in the previous section (see Table 4.8). A complete picture of a theme is essential for meaningful communication with the readers.

The 'CHIDREN' principle as a professional practice

- (107) Death of a Mermaid (see Table 4.9)
- (108) Just like that of the little mermaid, a dugong's journey is one that reads like a sad fairytale as these majestic princesses of the sea fight for their survival. (see Table 4.9)
- (109) MANY AN ANIMAL LOVER WOULD SPEW the worn out quote of the famous little Indian man; a man whose threads of white and heart of gold belied his fight for justice and freedom. But amidst framed photos of adulation and loud echoes of his wise words, the human race continues its destructive decline into decadence. In Malaysia, qualities of this unavoidable ugliness has spawned societal acceptance of institutionalised cruelty. (see Table 4.11)

Excerpt 4.18: The practice of 'CHILDREN' principle in natural history.

Readership of MN may consist of mostly the adult population; however, children may love the photographs of natural history and short descriptions that appeal to them. This practice considers the reader's needs, interests and perceptions for the construction of genres and contents appropriate for their consumption. Take for example, in (107) and (108), the portrayal of a fairy tale character of 'the little mermaid' appeals to the eyes of the young where 'princesses' are often depicted in cartoons and animated movies. On the contrary, quotes (102) by a famous person (109), the use of complicated words and the topic of society, social welfare (cruelty), justice and freedom will not be suitable or appropriate to children. Nonetheless, adults and the elderly groups would be more likely to appreciate them and learn about natural history differently. Hence, the holistic impressions of a genre should cater for uniform groups through the use of fundamentally different approaches (Beck & Cable, 2002b).

4.4.2.2 The practice of teachable moments

Issues	Title	Contents / Text excerpts
Dec 2005	“The EAGLES Are Coming!” [Campaign poster]	Graphic 1 – A photograph of an eagle perching Graphic 2 – Map to the venue Text – <i>Join the excitement at Raptor Watch 2006 ...</i>
Mac 2006	“The EAGLES Are Coming!” [Campaign poster] [Same as Dec 2005 issue]	Graphic 1 – A photograph of an eagle perching Graphic 2 – Map to the venue Text – <i>Join the excitement at Raptor Watch 2006 ...</i>
Mac 2007	THE RAPTORS ARE BACK! [Campaign poster]	Graphics – Photographs of an eagle and owls Text – <i>JOIN MNS FOR SOME EXCITING ACTION AT RAPTOR WATCH 2007 ...</i>
June 2007	“A Black Baza’s eye on Raptor Watch 2007” [Travel article (nature excursion)]	Graphics – Photos of the event Text – <i>It’s been a long non-stop journey from Sumatra but here I am at Tanjung Tuan – but what is that ruckus below? ...</i>
June 2008	“Jolly Jambore: Behind the Scenes of Raptor Watch Week 2008” [Event article]	Graphics – Photos of the event Text – <i>Heavy clouds hang over the resort as the weather refuses to cooperate. Nevertheless, throngs of volunteers appear on the grounds of PNB Ilham Resort on the eve of the event, as ...</i>
Mac 2009	“THE RAPTORS ARE BACK!” [Campaign poster]	Graphic – A portrait caricature of an eagle Text – <i>Come watch poetry on wings ...</i>
Mac 2010	“The RAP-TORS ARE BACK” [Event article + Nature article (raptor and raptor migration) + Tourism article (venue)]	Graphic – Mascot cartoons (in rap outfits) representing three raptors species Text – <i>Watch out! Our popular Raptor Watch event is back with a band and we plan to bring you more fun and games all weekend long this March ...</i>
Mac 2011	“Flight to the end of the world” [Nature article (raptor migration)]	Graphics – Photos of the event Text – <i>THE RAPTORS WAITED FOR THE MOMENT. For days she felt restless: a longing growing within. This morning, high in a tree on the Sumatran coast, it became intense urging her to action ...</i>
Mac 2012	“The Artistry of Raptors” [Travel article (nature excursion)] [Cover page of the issue]	Graphics – Photos of raptors and the event Text – <i>There’s nothing quite like the sight of seeing hundreds of majestic birds of prey circling in the sunny skies of Tanjung Tuan, Port Dickson. I’ve never been ...</i>

Table 4.13: Raptor Watch – an example of a teachable moment in natural history.

This practice is best explained with one of MNS' signatory event known as 'Raptor Watch' (henceforth RW). The event is centred on the phenomenon of raptor migration that occurs annually during the month of March. Raptors are birds of prey and they migrate from North Asia and Siberia to the south to escape winter and then back again to their breeding grounds from February till March or April. The exciting aerial display

of hovering raptors above the skies brings birders, nature enthusiasts and the public together to celebrate the nature event.

When genres in MN are traced in a chronological order (see Table 4.13), it can be shown that it was by no coincidence that write-ups or promotional discourse about RW appear in specific issues. For the past 3 years and including the recent issue of MN, genres about RW were intentionally (or strategically) included in publication for the first quarter of the year i.e. in the month of March. When readers read about RW, they are most likely to be drawn into the crowd at the event and this is precisely what ‘teachable moment’ is all about! This practice enables professionals to teach and create awareness at the right time at the right setting to maximise meaning-making and nature appreciation of natural history.

Implications from the past also contribute to the effects of the practice. Genres about RW have evolved from the form of campaign posters (promotional discourse) to travel, nature and event articles (interpretive genres and hybrid forms), as well as cover page graphics (multi-modal of text and images) over the years from 2005 to the present. It started with an announcement-like genre to advertise RW to the readers (Year 2005 – 2007) and then followed by submission of articles on RW which are published after the event (Year 2006 – 2007) to become hybrid genres that are produced in conjunction with the event happening in March every year (Year 2008 to present). This discursive practice and procedures are largely driven by the professional practice of ‘teachable moment’ in natural history education.

Other examples that reflect this practice can also be found in MN genres concerning events such as the zoo closure and exhibition of indigenous community, and other phenomenon such as haze (see Table 4.14). Publications of these are timely and they capitalise on on-going or current debates and concerns of the society, by following

the practice of ‘teachable moments’ to connect readers’ interests with relevant natural history.

Teachable moment about ‘zoo closure’		
Jun 2011 (Trigger) ↓	“Complaints led to raid” (The Star, 23 June 2011)	KULAIJAYA: The order to raid Saleng Zoo and rescue the animals came from the Natural Resources and Environment Ministry after public complaints against the zoo were found to be true...
	“WSPA lauds closure of Saleng Zoo” (The Star, 24 June 2011)	PETALING JAYA: The World Society for the Protection of Animals (WSPA) has applauded the wildlife department’s move to close the controversial Saleng Zoo and welcomed further enforcement ...
Sep 2011 (Teachable moment)	“Just Closure” (Malaysian Naturalist, Sept 2011) <i>[Next issue after the trigger]</i>	Last month, the Department of Wildlife and National Parks (PERHILITAN) proved that they were not just figureheads and took the unusual yet crucial step to not renew the permits of Saleng Zoo in Johor ...
Teachable moment about ‘indigenous community’		
Jun 2011 (Trigger) ↓	“Orang asli in dire straits as Belum-Temenggor forests laid bare” (The Star, 14 June 2012)	Logging, poaching and over-harvesting of the Belum-Temenggor forests have left the orang asli with little to look forward to ... emptying the Belum-Temenggor forests of its wild resources ...
	“Nomads in the Belum Temenggor Rainforests” (Malaysian Naturalist, Mac 2012) <i>[Next 3rd issue after the trigger]</i>	Nomads in the Belum Temenggor Rainforests ... the survival of a select group of indigenous people and their culture despite the onslaught of development and progress that threatens to marginalise them ...
Teachable moment about ‘haze’		
Jul 2011 (Trigger) ↓	“API flares up all over country” (The Star, 12 July 2011)	PETALING JAYA: A major part of the country has been enveloped in haze due to fires in Sumatra and Borneo and there is no immediate respite in sight.
	“Fighting Fires: in Raja Musa Forest Reserve” (Malaysian Naturalist, Sep 2011) <i>[Next issue after the trigger]</i>	HAZE IS AN UNWELCOME INTRUSION into our everyday lives ... While Malaysians generally associate haze with large-scale burning ... let’s not forget the peat fires can also burn right here in Malaysia ...

Table 4.14: The practice of 'teachable moments' in natural history.

4.4.2.2 The practice of interpretive writing

We have seen how examples of interpretive genres have forged intellectual and emotional connections between the readers and natural elements in the principles of ‘REVEAL’ (see Excerpt 4.15). Now, we will explore how the practice of interpretive writing is applied in these genres through the function of tangible attributes, intangible qualities and universal concepts to achieve similar interpretive purposes.

(110) “Death of a Mermaid.” Just like that of the little mermaid, a dugong’s journey is one that reads like a sad fairytale as these majestic princesses of the sea fight for their survival. (see Table 4.9)				
Tangible	→	Intangible qualities	→	Universal concepts
Dugong	→	Warm-blooded and part human (mermaid in fairy tale)	→	Living beings (alive)
	→	Aging and turns old	→	Death
	→	Living a life / in reality (journey)	→	Family, work (search for food)
	→	Beautiful, pretty (princesses)	→	Beauty, loveliness, cuteness
	→	Persistent, always trying, never give-up (fight)	→	Life values, survival
(111) Great Argus’ are a definitive sound of the rainforest, their calls echoing over the land day and night ... extreme lengths some species evolve in the sexual battle. Driven to attract females, male birds have gone through some of the most bizarre and extreme modifications; sometimes even to their detriment ... developed a beautiful fan ... dazzling display ... downside ... sacrificed its ability to fly well ... walking around the forest floor which makes it an easy target as it is easily trapped in snares set by poachers. (“Dancing for a mate, FINDING A HUNTER, Malaysian Naturalist-Sep2011, p. 50-51)				
Tangible	→	Intangible qualities	→	Universal concepts
Peafowl	→	Noisy (sound, echo)	→	Attention
	→	Need for a life partner (sexual battle)	→	Companionship, reproduction
	→	Disadvantage, harmful (detriment)	→	Damages and injuries (physical/emotional)
	→	Necessity, acceptance of fate (sacrifice)	→	Decision-making, choices, trade-off, destiny
	→	Foolishness, mistakes (trapped)	→	Danger, alertness

Excerpt 4.19: The practice of interpretive writing in natural history.

Following the examples shown in (110) and (111), the tangible elements are associated with intangible qualities that are inherent in them to evoke subjective meanings based on the reader’s perceptions. The understanding that readers gain is then linked to larger ideas and universal concepts that everyone shares such as death (110), family (110), survival (110), companionship (111) and destiny (111). These intricate interrelationships activate intellectual and emotional connections in the readers so they may associate with the tangibles, understand them (linking to the intangible qualities), appreciate meanings that are relevant to their subjective perceptions (linking to universal concepts), and ultimately care about something through discovery of deeper meanings and knowledge of natural history.

- (112) **“The Health-Conscious Beetle”** ... Whilst reaching for the half-packet of ginseng root in my office drawer, I was shocked to see little bugs crawling all over the packet.
(Veronica Khoo & Azmy Mahyudin, Malaysian Naturalist-Dec2011, p. 8-9)
- (113) **“Blue-crowned Hanging-Parrot: Hanging in there...”** ... So far, the Blue-crowned Hanging-parrot seems to be hanging in there, but for how long?
(Chris Sherperd, Malaysian Naturalist-Dec2011, p. 58-59)
- (114) **“Inside the Quail Trap: A botanical Snapshot of Gunung Jebak Puyuh”** ... Jebak Puyuh is an apt name for this hill because to enter the ‘trap’ you need to walk through a dark tunnel suddenly coming out in a secret garden that is completely surrounded by high cliffs – there’s no way out unless you can fly!
(Ruth Kiew et al., Malaysian Naturalist-Jun2011, p. 32-36)
- (115) **“World’s Smallest Frog Crawls out of Pitcher Plant!”**
(Bjorn Olesen, Malaysian Naturalist-Mac2011, p. 12-13)
- (116) **“Found! The Tallest Tree in the Tropics”**
(Chey Vun Khen, Malaysian Naturalist-Mac2011, p. 14-15)

Excerpt 4.20: Interpretive writing for titles in natural history.

Interpretive writing employs unique writing strategies and techniques to serve the functions that have been explained earlier. These strategies and techniques are closely related to the practice of creativity or the ‘ART’ principle. This practice is commonly used to create attractive and interpretive titles such as the examples shown in Excerpt 4.20. Common techniques employed include the use of personification (112), alliteration (113, 116), a discordant message (114) and superlatives (115, 116); the first and last types are the most appealing ones for children and teenagers.

Sometimes, professional practices may overlap and complement each other. Interpretive genres reflect the interconnections between the practice of nature/environmental interpretation (both ‘ART’ and ‘CHILDREN’ principles in particular), and the strategies and techniques of interpretive writing.

4.5 SUMMARY

To explore the world of genres in natural history, we started off by identifying the different types of genres through various classification systems such as *genre sets*, *systems of genres*, *genre networks*, *genre chains* and *genre colonies*. Findings revealed distinct genre types at different levels of generalisation, and they are interconnected by networks of generic texts that serve specific communicative purposes within and across the disciplines of Natural Sciences, nature studies, and Ecological or Environmental Humanities. Categories of genres have been identified according to their disciplinary and professional boundaries. Hybrid genres have emerged from these generic classifications to serve combined and socially recognised communicative purposes through mixed and embedded forms. One of the private intentions of hybrid genres is to bend generic forms and conventions to attract readership, and to promote learning of natural history through contemporary discourses pertaining to travel and tourism, the environment and conservation.

A new genre colony is needed to describe genres that exist in natural history, one that encompass the different categories and classifications given earlier. All closely related genres of similar interests have been grouped together to form the colony of ‘interpretive genres’. Members of this colony share similar communicative purposes which are both educational and ‘interpretive’ in their nature. The goals of interpretive genres are to reveal meaningful relationships beyond factual information, and to forge intellectual and emotional connections between the audience and resource in the natural world. These genres tend to promote or elicit prosocial behavioural changes via provocation and reveal deeper meanings to the audience. A model of genre analysis for interpretive genres has been proposed for future use. This generic structure describes typical cognitive patterning of interpretive genres in natural history.

Interpretive genres in natural history operate in a socio-cognitive space which includes aspects such as disciplinary culture and professional practices that often change or modify generic integrity. The disciplinary culture of natural history exhibits strong influences in the discursive and professional practices of these genres. The norms and conventions such as the inclusion of academic sub-genres (references, acknowledgements) and technical texts (taxonomic naming of species) from the discipline of Natural Sciences are often observed in generic integrity. Furthermore, interpretive genres often reflect the awareness, understanding, appreciation and conservation of nature that are largely driven by the motivation deeply rooted within the discipline. Nonetheless, genre integrity also reveals various professional and organisational identities at different social, institutional and individual levels.

Professional practices have profound implications on the construction, use and interpretation of genres in natural history. The practice of nature or environmental interpretation, teachable moments and interpretive writing are applied by writing strategies and techniques employed in the construction of interpretive genres.

CHAPTER 5: CONCLUSION

5.1 INTRODUCTION

The purpose of this research is to explore the genres in natural history and how disciplinary culture and professional practices shape the integrity of these genres. Conclusions drawn from findings address all research questions including (a) the identification of genres in natural history; (b) explanations on how disciplinary culture of natural history underpins genre integrity; and (c) explanations on how these genres reflect the professional practices in natural history. Summaries of discussions of major findings and conclusions drawn from this research are provided in the following. Then, these are followed by some implications of the research, recommendations for further research and finally, a reflection on this research by the researcher.

5.2. MAJOR FINDINGS AND CONCLUSIONS

5.2.1 Overall contribution of the research

The gap in discourse-analytical and genre-based studies of natural history texts has been addressed at least by the following findings and discussion. This research contributes to the current literature of genre analysis and interpretation, and its empirical findings provide insights and practical implications to those involved in the discursive practices and professional communication related to natural history. There are four major findings altogether and these are summarised in the following.

5.2.2. Interdisciplinarity and variations in genres in natural history

One of the major findings of this research is the variety of genres identified at various generic levels which exist within, in between and across disciplinary and professional boundaries that are related to natural history. Specificity of disciplinary or professional genres is blurry because the majority of these genres are hybrids and they often comprise mixed or embedded forms to achieve multiple communicative purposes.

A conclusion that can be drawn from this finding is that genres in natural history are not straightforward generic types as their integrity and purpose cross interdisciplinary boundaries in the disciplines of natural sciences, nature studies, ecological or environmental humanities, and environmental studies. These genres exhibit features and contents of the academic disciplines they are associated with and such conventions may vary at different professional settings. Therefore, hybrid genres are formed by the combinations of appropriate generic types to facilitate communicative purposes that reflect both disciplinary and professional conventions. Combined forms of discourses in natural history have tactical reasons that link disciplinary knowledge, communicative purposes at the professional context, and contemporary information needs in order to be relevant, useful and acceptable to the discourse community. Hence, natural history genres may be represented by a variety of forms (including hybrids) and these variations do indicate the existence of unique and tactical types of genres within its niche.

5.2.3. Interpretive genres as an emergent genre colony in natural history

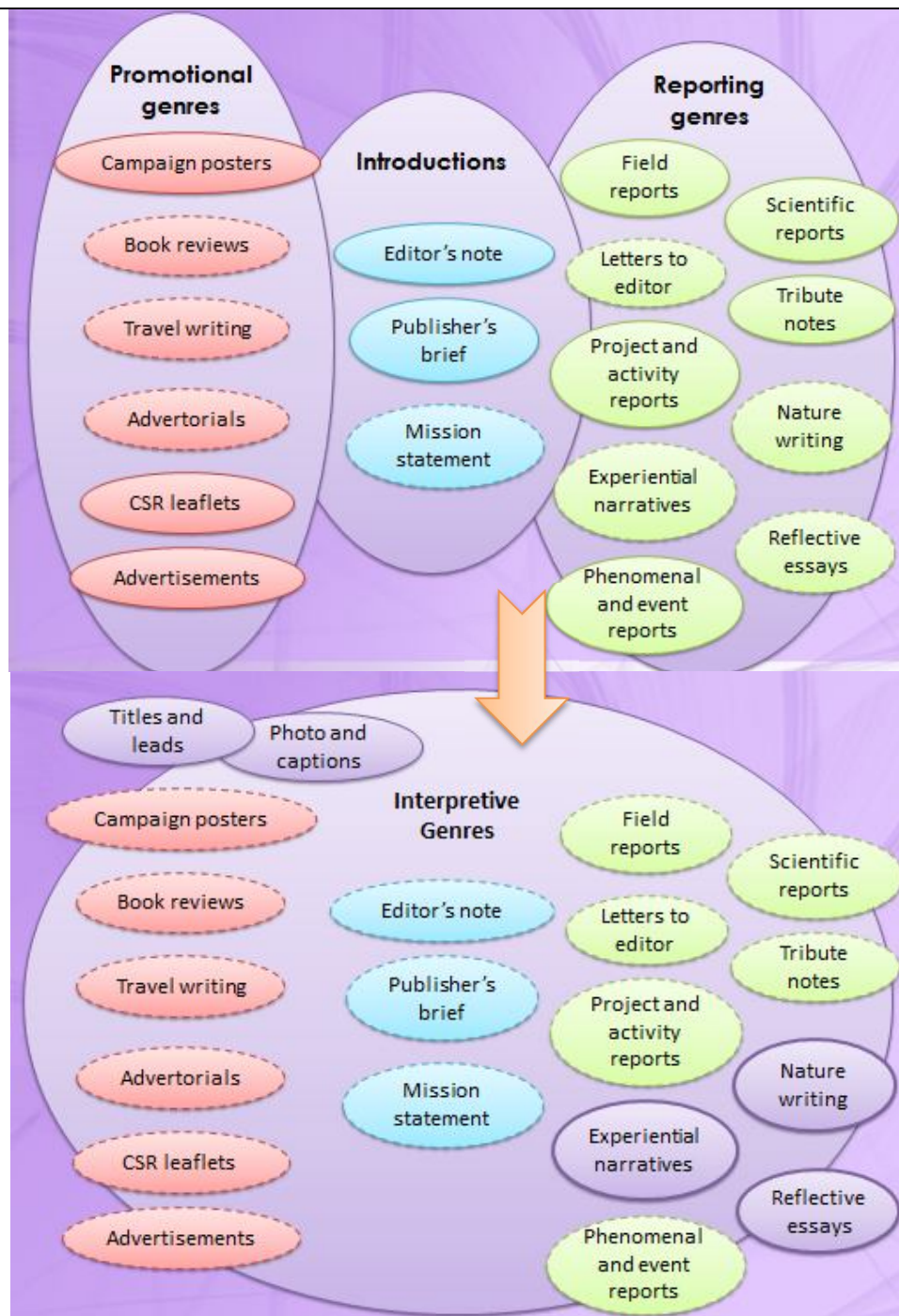
Another major finding is the new genre colony known as ‘interpretive genres’ that seems to emerge naturally from the research corpus. It comprises closely related genres within and across disciplinary and professional boundaries of natural history that share and serve similar communicative purposes. The main functions of ‘interpretive genres’ are to educate people on new knowledge about the natural world and reveal meanings and interrelationships of natural elements or resources rather than just giving factual information about them. To achieve these purposes effectively, these genres need to forge intellectual and emotional connections between the audience interest and the deeper meanings of something which is related to natural history.

A conclusion that can be drawn from this finding is that a consistent definition that represents diverse genres found in natural history is essential for the systematic

description and identification of their integrity. With the introduction of the colony of ‘interpretive genres’ accompanied by a model of genre analysis that is proposed based on empirical findings, natural history discourses can be analysed for future research and practical use.

Closely related to this conclusion, ‘interpretive genres’ also widens the concept of genre colony to incorporate not just the constellation of related genres and the appropriation of semiotic resources that create hybrid forms through the process of colonisation (Bhatia, 2004), but also the possibility to subsume other ‘interpretive’-like genres (of primary or secondary members) from other genre colonies, provided that they display or demonstrate ‘domineering’ communicative purposes which are prevalent in or pivotal to the colony of interpretive genres. Following is a scenario to illustrate the above.

Suppose an advertisement (primary promotional genre) that is related to nature or conservation shows predominant characteristics and features of ‘interpretive genres’, or perhaps employs rhetorical functions that are both provocative and emotive (the defining generic values of the new colony), it is only logical to also identify the advertisement as a member (presumably secondary) of interpretive genres! Therefore, with the placement of this advertisement in the context of natural history, this genre can also be referred to as an ‘interpretive’ advertisement. Hence, the boundary of ‘interpretive genres’ may sometimes be fluid but it offers greater flexibility for the grouping of closely related genres that cuts ‘across colonies’ (in addition to those cutting across disciplinary and professional boundaries) to fulfil the function of interpretation in discourses related to natural history. For an illustration of the above, please see Table 5.1 shown on the next page.



Notes: Genres or sub-genres in circles with dotted lines are secondary members, while those in full circles represent primary members of the respective genre colonies, which are highlighted in bold.

Figure 5.1: Postulated 'interpretive genres' across other genre colonies in the context of this research

5.2.4. The underlying disciplinary culture of generic integrity in natural history

The third finding of this research is that the disciplinary culture of natural history actually constrain and govern the appropriacy of text types as well as their generic integrity in the construction of contents related to the natural world. Based on empirical findings, genres related to natural history often embed underlying disciplinary culture such as appreciation (references, acknowledgments, naming conventions and etymology of names) and integration (interdiscursivity across professional discourses or genres). In addition, the integrity of these genres also reflects the underlying professional goals and objectives, and various levels of identities that are defined by the knowledge and boundaries enclosed by the disciplinary culture of natural history.

A conclusion that can be drawn from this finding is that genres of natural history are deeply rooted and bound within their disciplinary perimeters, which are associated with norms and conventions that are closely related to education and knowledge learning. Furthermore, they are also the manifestations of professional or organisational goals, objectives and identities that serve to communicate and describe meaningful information about the natural world. Hence, discourses related to natural history are always educational, comprehensive (with lots of information) and communicative (containing important knowledge for social sharing) because of the implications and influences they gained from the underlying disciplinary culture.

5.2.5. The visibility of professional practices in genres of natural history

The fourth finding is that the practice of interpretation and its relative counterparts such as the practice of ‘teachable moments’ (as explained earlier in Chapter 2) and interpretive writing are some of the common professional practices that exert influences on the integrity of genres related to natural history. These genres reflect the use of writing styles, strategies and techniques of such practices and these behaviours have been consistent and pervasive throughout the research corpus.

A conclusion that can be drawn from this finding is to recognise the importance of these practices in the understanding of the discursive practices (construction, use and interpretation) of these particular genres. To achieve the intended communicative purposes expected of the field of natural history, one needs to consider the underlying principles, philosophies and key practices of the relevant professions that shape these genres. The resulting forms usually mirror compatible (or expected) professional practices. Hence, for genre members in the colony of interpretive genres in particular, they should reflect visible professional practices that stem from the concept of interpretation within the configuration and composition of their integrity.

5.3 CONCLUDING REMARKS

Findings have revealed an interesting grouping of genres in the field of natural history. These genres are mostly interdisciplinary and some instances seem to assume the hybrid forms to deliver specific communicative purposes that are socially recognised by the discourse community. A new genre colony called ‘interpretive genres’ is proposed to encapsulate the preceding collection of genres to link and describe all possible generic forms that are related to natural history. The integrity of genres of this colony is closely governed by the disciplinary culture of natural history and the underlying professional practices which they reveal.

In sum, to be able to describe and analyse genres of natural history, one has to explore the available and emerging discourse forms (including hybrid types) in the colony of ‘interpretive genres’. Further to this, it is also pertinent to examine how the disciplinary culture of natural history and the professional practices that are drawn from the concept of interpretation shape the discursive practices as well as the integrity of these genres within the colony.

5.4. IMPLICATIONS OF THE RESEARCH

Following are some uses and implications provided by this research based on the findings, analysis, discussions and conclusions:

- The emergent genre colony of ‘interpretive genres’ is a result of a systematic examination of text types and discoursal patterns, as well as the underlying disciplinary culture of and professional practices in natural history based on existing genre concepts posited at different levels of generalisation – this procedure implies the viability of genre analysis for generic texts across disciplines that are inter- or multi-disciplinary in nature at different professional settings.
- Genre analysis of dynamic, hybrid and appropriated text forms that are usually found in the complex world of the professionals and inter- or multidisciplinary fields of research (such as natural history which combines the knowledge and practice from natural sciences, nature studies, ecological humanities and environmental studies) create new avenues and exciting ventures for applied research in professional communication to address the gap that is found in existing literature.
- For pedagogy, the teaching and learning of genres in niche disciplines such as natural history may gain rich insights and implications from this research to develop or innovate new curriculum contents for related courses like natural history education, environmental education, education for sustainability, nature/environmental interpretation, sustainability studies, environmental communication, etc. Furthermore, knowledge gained from this research can be used to develop Language for Specific Purposes (henceforth LSP) modules in professional training and development programmes for nature and environmental interpreters, communicators, natural history writers, etc.

- For readers (in the context of publication), the awareness of the existence of ‘interpretive genres’ may provide the necessary scaffold to help them consume the knowledge of natural history in a meaningful manner that relates to their interests, inspires deeper understanding, activates intellectual capacity, reveal interrelationships and connects with their emotions. The strategies, techniques and styles of interpretive writing that are employed as well as the application of the principles of interpretation in natural history genres may trigger reader’s engagement with the writing effectively.
- Last but not the least, an intuitive understanding of the intricacy of natural history knowledge and other related environmental concerns hold great potential in building awareness of the natural world. Hence, this research may advocate a platform to achieve such a communicative purpose so readers may develop their understanding about nature, learn to appreciate their existence and interrelationships, and ultimately to protect and conserve the natural resource or the environment. This progression has to be fuelled by love, passion and care for one’s natural heritage or legacy to ensure a sustainable future for humanity.

5.5. RECOMMENDATIONS FOR FUTURE RESEARCH

Further studies can be conducted to incorporate a more comprehensive corpus of information that represents the diverse perspectives on genres from different disciplines, professions and institutions. In other words, a thick description produced from a multi-dimensional and multi-perspective approach is necessary to address the complexity of the real world of discourse in natural history and its interrelated counterparts. In light of this, the following should be considered in future lines of research inquiries:

- To explore other forms of discourse including the spoken (talks, guided walks, conversations, etc.) and multi-modal genres (graphics, photographs, videos,

websites, etc.) especially of the latter which has been the norm for natural history communication.

- To examine the diachronic aspects of natural history genres to discuss how these generic forms have changed and evolved over time into hybrid forms to achieve specific communicative purposes (or intentions) that are socially recognised by the discourse community. Variations and derivations of genres, and their interdiscursivity may be driven by contemporary needs to cultivate meaningful learning of natural history and to develop environmental literacy in the society.
- To associate findings with anthropological and sociological notions such as culture, sense of place, heritage, ecological values, public understanding, etc. that are closely related to the question of how genres are developed, disseminated and consumed in the society.
- To combine a variety of communication models to the existing examination consisting of both genre analysis and the principles of interpretation, to shed some light on other unexplainable areas that may only be addressed by eclectic approaches, e.g., the AIDA (attention, interest, desire and action) model used in marketing and advertising for promotional genres.
- To conduct cross-country comparative studies to gain a better understanding of how natural history may contribute to improving the quality of life, thus, the study of the underlying functions and workings of discourses/genres that do that.
- To further explicate, support, validate or expand the definition and description of ‘interpretive genres’ – one possible avenue is to examine cross-disciplinary and ‘cross-colony’ features of the genre members that belong to this colony.
- To involve ethnography analysis of findings and information gathered from the professionals and experts in the discourse community (through interviews, participatory research, immersion in the professions, etc.) as well as the

examination of genre consumption via surveys or inquiries of audience reception.

- Last but not the least, to conceptualise a comprehensive model of discourse analysis for natural history genres (and specifically for them) that reflect the practical reality of the professional communication that involves nature and the environment to advocate awareness-building, understanding, appreciation, and ultimately protection by means of conservation for future sustainability.

5.6. REFLECTIONS OF THE RESEARCHER

As the research has come to an end, I wish to reflect on the journey undertaken to craft this piece of knowledge sharing. It may have started off with simple aims to expose the world of genres in natural history, but the entire research experience has been exhilarating and an overwhelming effort. However, I believe that the discovery of some meaningful findings is significant and valuable to the public, research, academic, learners and professional communities. Hence, it is my hope that this research will continue to inspire further similar research in the near future to benefit both the human and the natural world. At the same time, I am grateful for all that has been learned, discovered and experienced during the research process – and special thanks to all the contributors who have given this research a life of its own!

Lastly, I would like to share the following with you:

*“Forget not that the earth delights to feel your bare feet and
the winds long to play with your hair.”*

(Kahlil Gibran)

And while ...

*“Society speaks **[in words]** and all men listen, mountains **[of natural history]** speak and wise men listen”*

(John Muir)