

**PUBLICATION OF RUBBER RESEARCH ARTICLES:
INVESTIGATING A DISCOURSE EVENT FROM A MACRO
GENRE PERSPECTIVE**

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B. Eng (Hons)

**Thesis submitted to the University of Nottingham for the
degree of Doctor of Philosophy**

ABSTRACT

Producing published research is an endeavour filled with risks, especially from the perspective of novice writers of scientific research articles (hereafter RA). This research project focuses on the environment of scientific research, where there is often little explicit guidance given to early-career academics in language skills surrounding their work. Although the target audience of an RA are researchers in the area, the risks and success involving its publication depend on the relationship between writers and their initial evaluative readers. Journal editors and reviewers represent crucial readers in view of their contribution to enhancing the RA as it evolves from the point of submission towards an unconditional final acceptance. Communication between RA writers and corresponding editors and reviewers reflects a fundamentally interpersonal issue. Lack of experience, awareness and understanding of the entire publication process among novice writers leads to challenges in negotiation and problematic outcomes at the production level. A significant problem for such researchers is the common assumption that a journal research article (RA) is a single, finished text, instead of recognising it as the culmination of a largely dialogic process which itself comprises a macro genre (as per Martin 1992, understood as an interlocking set of genres which operate with an over-riding social purpose).

This research project sketches out the boundaries within which specific editorial decisions take place via technical communications by researchers in a particular context, and in doing so brings attention to the crucial role of understanding the various kinds of readers of whom writers of such texts should be aware. The theoretical framework for the study is situated in the fields of Systemic Functional Linguistics (SFL), Genre Analysis with respect to scientific writing and English for Research Publication Purposes (ERPP) which are constantly evolving. There is however a gap in literature from the perspective of understanding the RA publication process as a discourse event.

The particular context in which I draw my data is the Journal of Rubber Research (JRR), a publication of the Malaysian Rubber Board (MRB). The JRR faces a persistent and underlying issue concerning the insufficient backlog of submissions for publication. Upon studying the pattern of rubber RA submissions and published rubber RAs, it was apparent that scientists within the MRB were contributing very minimally in writing to the JRR, despite the obvious fit of the journal to their research. The number of researchers in proportion to the number of publications reported annually over a 10-year period (2003-2013) reveals a trend of under 16%

of scientists within the organisation actively involved in scientific writing and achieving success with publication of rubber RAs in peer reviewed journals. This meant that 84% of scientists in the organisation were dormant in publication; I believe this indicates a need for assessment on scientific writing and the rubber RA publication process with a focus on novice writers. There is therefore a significant issue of research findings by MRB scientists not reaching their desired readers, and this research attempts to reveal how and when the macro genre does or does not fulfil its social purpose of seeing quality publications reach the public.

The research design and methodology comprises a four phase analysis, with discussions and conclusions emerging from triangulation of results. The first phase is outlined by selected case studies on three rubber RAs that specifically represent an unproblematic and a circuitous route to publication as well as one that led to rejection, while the second phase involved a quantitative macro genre analysis of 44 manuscript pathways within the dataset that comprised the rubber RA publication discourse event. Following this, the third phase comprised a semantic coding analysis of 139 reviewer reports and 41 author's responses to reviewers within the dataset prior to the fourth phase where feedback from 60 participants of a questionnaire on scientific writing and RA publication is juxtaposed with findings from the first three phases of analysis.

The research is formulated to provide a rich and qualitative description on the development of rubber RAs from the perspective of how they move through time, affected by a number of participants: the researcher(s), the journal editor(s), and the reviewers. The evolution of rubber RAs from the point of submission up to acceptance is realised via a progression of required and optional stages throughout the discourse event, respectively, which in turn define points of contention for the success or failure of the social purpose and ultimate goal, being publication. This study thus sketches out the boundaries within which specific editorial decisions take place as a result of the writers' use of particular linguistic resources which may be related to their success and risk of failure in technical communication in a particular context. The research findings will contribute towards improvements in the cultural practices of scientific writing and rubber RA publication among Malaysian scientists in particular, and fundamentally to linguists as well as the wider scientific discourse community globally, in extending the idea of an overarching rubber RA publication discourse event while proposing a pedagogical framework on the dialogic nature for authors responding to reviewers, consisting preferred and dispreferred options for successful navigation along the publication pathway.

ACKNOWLEDGEMENTS

Firstly, I thank God, for his providence as I progressed along this four year journey, one step at a time. I'm blessed with wisdom and love as I experience Your guidance day by day realising that the good are examples and the bad, boundaries. Thank you, Lord.

I take pleasure in extending my heartfelt gratitude to the following people presently in many countries, who so generously contributed towards completion of this thesis. Their success has always been an inspiration to me and I admire each of them as beautiful individuals. My research motivations lie in knowing there exists much unpublished works in the sea of new knowledge, while my findings draw closer to the reasons behind this in allowing for prescriptive solutions. Owing to the incessant support of these special people, my doctoral journey has been nothing short of fulfilling and challenging in a good way.

It is difficult to overstate my gratitude to my supervisor, Dr Derek Irwin. My PhD has been an amazing experience and I thank Derek wholeheartedly, not only for his tremendous academic support, but also for giving me so many wonderful opportunities. With his enthusiasm, his inspiration, and his great efforts to explain things clearly and simply, he helped to make linguistics fun for the scientific editor in me. Dr Derek provided me with every bit of guidance, assistance, and expertise that I needed during my first half of the journey; and even after moving to China over the past two years he continued to contribute valuable feedback, sound advice, encouragement and lots of good ideas throughout my thesis-writing period. I would have been lost without his fundamental role in my doctoral work. In addition to our academic collaboration, I greatly value the close personal rapport that we have forged over the years. I quite simply cannot imagine a better supervisor. Derek, your selfless time and care were sometimes all that kept me going. Additionally, thank you for reminding me during crucial times that family is a priority and should always come first... I could not agree more for they are the most important people in my world, whom I love dearly and cherish for all the days of my life. Words cannot express how grateful I am for all the sacrifices they have made on my behalf.

On another note, it was brilliant to have the opportunity to work with linguistic experts during their tenure at the University of Nottingham, Malaysia. I am also grateful to Dr Ahmad Izadi and Dr Sarah Lee who are now back home in Iran and Australia, for their unfailing support and assistance as my co-supervisors at different points during the four years of my candidature. Profound gratitude goes to Ahmad, for being there during most of my first and second years

during which I was gathering data and formulating my survey questionnaire. His advice pertaining to the formulation and piloting of the survey have come a long way towards analysing feedback to account for levels of awareness and understanding with regards to scientific writing and RA publication among participants. I am particularly indebted to Sarah for being so dedicated to her role as my secondary supervisor. Our long chats during meetings on campus including weekends and over the holidays (especially during the last leg of the journey when I resumed working full time) always helped put my thoughts into perspective. Her insights were particularly helpful as a subject specialist who was reading my work towards the final phase of my analysis and thesis writing. Her careful reading and sound feedback on my results and discussion chapters greatly improved the flow and interpretation of my analysis and findings.

I am hugely appreciative for the help of Dr James Williams, a fellow colleague and friend who is now based in the UK, especially for sharing his expertise on quantitative analysis for the semantic coding and survey feedback results, so willingly. Special mention goes to Bernard Cheah of the Faculty of Arts and Social Sciences, class of 2016, who helped with the google doc platform for the survey questionnaire upon formulation and assisting me with related settings involved. I am indebted to my many student colleagues for providing a stimulating and fun environment in which to learn and grow during our post graduate conferences, seminars and discussions.

Finally, I would also like to thank all reviewers, authors and survey participants for their ethical consent in employing novel data sources for the purpose of this research. Special thanks is also due to the management of MRB, for approval in the light of permitting this research to be undertaken. I appreciate earlier reviewers of this work for their excellent comments and suggestions, particularly my annual review examiners Dr Lee Kean Wah, Dr Thomas Barker and Dr Stephanie Evers.

DEDICATION

Foremost, I dedicate this thesis to my life-coach and late grandmother whom I miss very much, Celine Reddy, and my charming son, Marvin Sandhu... because I owe it all to you both! You are and always will be my eternal cheerleaders. To my forever interested, encouraging and super enthusiastic boy who was always keen to know what I was doing and how I was proceeding, although it is likely that he has never grasped what it was all about! Your screams of joy whenever a significant momentous was reached and also just your general impudence is a reminder of your patience and selfless spirit despite the time and effort mummy had to devote to my research and thesis writing.

A very special gratitude goes out to my ever giving parents, Dr Arokiaraj and Violet Mitelda. I could never thank them enough for inspiring me with their own success and seeing me through in every way they could and much more than I would ask for, financially and emotionally. They have gone all out to ensure I've got this while pampering us regularly and spoiling their grandson with trips and treats, whisking him away during the summer holidays while I needed to work. Above all they bore me, raised me, supported me, taught me, and loved me. Words do little justice yet this comes from the bottom of my heart... Thanks, mum and dad for your almost unbelievable support, prayers, forgiveness and much more, this thesis is for you both too.

My beloved husband Ajitpal Singh, who has been a fine pillar of strength with captivating logic that sweeps me off my feet. I can't thank you enough for encouraging me throughout this experience, bearing with my peaking stress levels and stepping in as the super fun dad, planning boys' days out with Marvin giving me much needed space to focus on my thesis. You made it all the more possible for me to get a full draft together in the first place, especially towards the very end. Most of all raising our son and supporting my decision to undertake this sabbatical has been a precious and priceless experience allowing me much quality time for myself and the family. I cherish how we have grown together, creating everlasting memories as a family despite our differences. You have helped me realise the bigger picture over smaller regrets and how it helps to focus on the goal. Your role in my life was, and remains, immense.

I am grateful to my sister, Annette Shamala for all the moral and emotional support she has always showered me with. Thank you, for the many late nights and endless chatter at the points I needed it most. Love how we snap each other back into sanity while it's a constant reminder of the spot on chemistry between us. Growing up with you, 32 years and counting is one of my

most, prized blessings. Though our times together are limited now with motherhood and your recent move, nothing can take away that special bond we share. Rest assured we know how very overwhelming it gets when duty calls. Nonetheless knowing that we have got each other's back is most comforting. My brother in law, Surendran deserves special mention, for he was particularly supportive and believed in me all the way... akin to the dependable brother figure who's been ever ready to step in when needed. I've always enjoyed his carefree personality, judging less and loving more. A shout out to my precious little niece, Eesha and nephew, Aarav, for being around them little angels instantly floats my stresses away.

I thank my best friend since high school, Palvinder Gill for the much needed nights out and terrific times together over these years. She has been exceptionally reassuring towards my efforts throughout this doctoral journey, pushing me to the very end with constant inspirational reminders having seen me through these incredible years. We have found comfort in helping each other bounce back and up, while sharing the joys and pains life throws at us. We've enjoyed a fantastic few years in KL and kept it going stretching over a couple of decades during our stints of living and working at different ends of the globe.

I have saved my final words of acknowledgement for Marvin's nanny, Dany. Words cannot express how grateful I am to her, for she has been with us throughout these 8 years since his birth. She has been ever so dedicated in devoting her attention with love and goes out of her way for his happiness. She's a true blessing in every way and very much a part of our family, sharing our laughter and tears over the years. Last but by no means least, I am also grateful to extended family (my in-laws, uncles, aunts and cousins) and friends, both near and far, who have supported me at various points along the way by providing a loving environment with their support, understanding, well wishes and prayers. Because of them I know that distance and our busy lives have not been a barrier with us constantly touching base over the years. I end with a big thank you to one and all, for this journey would be far from smooth without everyone who has been a part of my struggles and accomplishments.

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GLOSSARY

Terminology	Abbreviation
Research article	RA
Systemic Functional Linguistics	SFL
Journal of Rubber Research	JRR
English for Research Publication Purposes	ERPP
Malaysian Rubber Board	MRB
Grammatical metaphor	GM
Inter-rater reliability	IRR
Journal Citation Reports	JCR
English for Specific Purposes	ESP
Reviewer Report(s)	RR(s)
Authors' response(s) to reviewers	ARR(s)
Generic Structure Potential	GSP
Contextual Configuration	CC
Computer aided qualitative data analysis	CADAS
Hermeneutic Unit	HU
Primary Documents	P-Docs
Research article manuscript iterations 1, 2, 3, 4 and 5	RA_M1/M2/M3/M4/M5
Inquiry	Inq
Non-submission	NS
Submission	Sub
Desk rejection	DR
Resubmission	Re-sub
Acknowledgement	Ack

CHAPTER 1

Introduction

1.1 Introduction

This chapter will outline the context of the study in stages with regard to both processes of scientific writing for rubber research article (RA) publication beginning with a brief history of current issues. Upon identification of a persistent and underlying issue concerning minimal success in achieving publication among scientists at a Malaysian research institution, a review of the literature confirms that there has been no particular attention on the processes of scientific writing and rubber RA publication in Malaysia. With a focus on novice writers, the motivation for this research is based on the under researched domain of ERPP from a Malaysian perspective. In extending the idea of an overarching rubber RA publication discourse event, its entirety can be seen as a series of related genres, referred to here as a macro genre (Martin 1992, p.560). Martin uses the term macro genre to refer to texts which combine, or have embedded in them, fundamental genres. The evolution of the rubber RA from the point of submission up to acceptance is realised via a progression of required, optional and peripheral stages throughout the macro genre, respectively, which in turn define points of contention for the success or failure of the social purpose and ultimate goal, being publication.

1.2 Background of Research

It has been widely commented on that the dominance of English has established global standards of publication in the context of scientific RAs, and there has been much research into various aspects of the process. One solution is to encourage novice writers to develop discipline-specific English skills (as in Cargill and O'Connor 2009). Canagarajah (1996, 2002) has argued that researchers who are non-native speakers have great difficulty in having their RAs accepted in English, and that, regardless of significant findings, their lack of mastery of the genre conventions and thus their lack of power in discourse excludes their work from international journals. It is, therefore, essential for the information presented in RAs to be structured according to specific rhetorical patterns, in order to avoid undesirable reviewer feedback or rejection (Adnan 2009).

Following these scholars, there are intersections between more general approaches to academic publishing for writers of English as a second or foreign language and more specific

aspects of the writing process. The fields of Genre Analysis (Swales 1990), composition studies, professional writing, and English for Research Publication Purposes (ERPP) have evolved alongside Systemic Functional Linguistics (SFL), which is a widely utilised framework for analysing the form and function of discourse. Rhetorical literacy, in particular, comprises understanding, analysing, evaluating and employing various writing strategies based on comprehension within the contexts of audience, purpose and writing situations (Cook 2002). Rhetoric studies represent an established focus area which has lacked emphasis from a Malaysian perspective (Suryani 2013), specifically with regard to both scientific writing and RA publication processes. Writing an RA for journal publication when the writer is both novice in the language and the field multiplies the difficulties. The time and effort required in composition coupled with lack of guidance with respect to discipline specific language skills often discourages such researchers.

A national scale study on soft skills development conducted among undergraduate students in public universities by the Ministry of Higher Education (MoHE) found that critical thinking skills ranked the lowest among other soft skill elements (MoHE 2011). This detrimental trend has significantly impacted the ability of novice writers to communicate effectively in various linguistic, cultural, professional and disciplinary domains. Findings of this research will contribute new knowledge to address the considerable lack of awareness towards macro generic features of the rubber RA publication process particularly among novice writers at the MRB. The influence of English and its significance towards achieving publication in international journals are noteworthy aspects that affect novice writers. Fundamental problems with respect to composition in the form of RAs are eventually encountered by every scientist in view of publishing their research findings.

Further refining these views to a national perspective, there has been a small degree of investigation on novice Malaysian scientists' participation in the publication discourse event or its realisation as a macro genre, and a rather insignificant focus on the genre of rubber RAs. Locally trained researchers also often lack scientific English writing skills and face much rejection based on writing problems. Previous work on genre analysis in Malaysia is limited in relevance to scientific RAs and the publication discourse event, due to the lack of focus on rhetorical literacy of novice writers. There have been some genre studies in Malaysia associated with the fields of literature, Malay language discourse, applied linguistics focusing on discourse analysis and pragmatics, mass communication, philosophy, policy and strategy (Suryani 2013, Alatas 2001). In this context, though, there has been little exploration into linguistic realisations and analysis associated with the RA publication discourse event,

although Loi et al (2016) use Martin and White's (2005) Appraisal framework to compare evaluative stance in English versus Malay RA conclusions.

Notable, however, is that while many of these studies have done some fine work from the genre perspective (particularly in the ways some of them focus on the ways in which peer review is often opaque to novice writers) and in terms of the need to assist writers in understanding the negotiation required in the process of publication, I contend that the best way to promote this knowledge is with an understanding of this as a social process comprising a series of genres which combine to achieve an over-arching purpose – in other words, a macro genre.

This research is approached from the perspective of scientists within a Malaysian research and development organisation, with particular regard to the rubber RA publication discourse event as a macro genre. The MRB represents a subsidiary agency under the Ministry of Plantation Industries and Commodities, Malaysia focused on rubber sciences, with a pool of scientists consisting of experienced and novice writers. As a specialised field, rubber science includes in its niche a vast potential of innovative and value-added research yet to be explored. In view of promising efforts from specially designed projects carried out within the Malaysian Rubber Board, it is noteworthy to devote focus on timely publication of research findings. The organisation is actively involved in natural rubber research carried out by more than 150 scientists. Rubber research includes approaches from the core science disciplines of biology, physics and chemistry, which indicates that, although the findings of this research are specific to the context of the rubber research community, they should be relatively applicable across these other major disciplines as well. The classification of research and innovation at the MRB includes the upstream, midstream and downstream domains as published in the organisation's website (Malaysian Rubber Board 1998). Specifically, upstream research comprises crop management, crop improvement and protection and biotechnology; midstream research comprises processing and pollution research; and downstream research comprises engineering and product design, advanced rubber technology, latex science and technology and chemistry and materials exploratory.

The dataset thus includes RAs and RRs from many possible scientific fields, and correspondingly experts from those fields, hence the process can potentially be extrapolated to support generalizability of findings to scientific RAs more broadly; while this thesis does recognize that each field, and indeed each publication, will have specific ways of instantiating its version of the macro-genre, its goal is to provide it as a basis with which to allow specific comparisons to be made. The *Journal of Rubber Research* (JRR) was first published as *Journal*

of the Rubber Research Institute of Malaya in 1929, and subsequently known as the *Journal of Natural Rubber Research* in 1986. The MRB has published JRR as of 1997 on a quarterly basis, with a collection of 21 volumes presently, consisting of four issues each. This peer-reviewed publication focuses on results of active experimental research and authoritative reviews on all aspects of rubber sciences. The JRR serves in building a collective knowledge base while communicating information and validating the quality of research within the discipline.

As Secretary of the JRR Editorial Committee, in addition to undertaking the role of both Managing and Scientific Editor for technical publications, my responsibilities include management of the publication process beginning with submission towards an editorial decision on manuscripts and ultimate publication of quarterly issues since 2005. This experience has provided me with both an insider perspective as well as the access to a novel and original data set of manuscripts, editorial correspondences, reviewer reports (RRs) and authors' responses to reviewers (ARRs) for the purpose of this research (upon ethics approval and participant consent). MRB's Deputy Director General for Research and Innovation is Editor-in-Chief, while Directors of Research within the organisation represent the Editorial Committee of JRR. The publication is overseen by the Director General of MRB, as advisor to JRR. The JRR Editorial Board consists of renowned subject specialists from all over the globe with international contributions and recognition in the various core science domains of rubber research.

My experience provides an overview of the complete publication process and discourse event, including initiating changes in these processes in recent years which have ultimately led to efforts for betterment of the journal. From an entirely paper based processing platform, online communication via email helped expedite and facilitate progression of submission, review and revision between editors, authors and reviewers. In 2012 I began groundwork for the initiation of a web based platform for JRR, to accommodate the entire process and participants' discourses. The Editorial Manager interface was selected and approved for this purpose. The framework was customised according to JRR requirements and standard practice while engaging researchers in science and academia globally. This shift certainly facilitated a wider range of communication and affiliations among scientists. An observable effect was the increased authorship and reviewer contributions to JRR, compared with the period prior to implementation of the Editorial Manager software. The software presented a user friendly and centralised communication platform for authors, editors and reviewers, while archiving the macro genre of the rubber RA publication discourse event from its initiation. The process

typically begins with the macro stage of Initiation involving of editorial correspondences between author and editor and submission of an RA related to rubber research for consideration of publication. The peer review process occurs in the macro stage of Evaluation, with editorial correspondences between reviewers and editor, and RRs. Finally, in the macro stage of Conclusion, an editorial decision is in order prior to the revision stage which involves a revised RA and ARRs for evaluation. Variations in the pathway to publication often involve a re-iteration of the macro stages of Evaluation and Conclusion. A descriptive chapter on results of the macro genre analysis (Genre Parameters, Chapter 5) delineates these macro stages of the overarching discourse event.

The journal also contributes towards appraisal of scientists within the organisation and building a scientific community in bringing together reputable and remarkable experts in the field of rubber sciences. Qualitative efforts on improvements in various levels of the editorial process as well as timeliness of publication led to the acquisition of an impact factor ranking by the ISI Web of Science (currently 0.32), noting a steadily increasing trend. JRR has been indexed and abstracted in major international databases as of 2007, including Thomson Reuters' Science Citation Index Expanded and Materials Science Citation Index. Among other databases indexing the publication are Scopus (Elsevier), Polymer Library (Smithers Rapra), CAB Abstracts and OVID. International rankings attained and sustained throughout the past decades reflect JRR's credibility as a recognised peer reviewed journal. An average period of between 6 months to a year is expected from submission up to the point of an editorial decision, followed by revision and ultimate publication. This aspect is a prerequisite for scientific publishing in the present era, in view of mushrooming predatory journals that practice "pay to publish" and unregimented peer review processes which result in expedited publication of papers.

1.3 Research Gap

The lack of potential authors submitting manuscripts for publication to JRR among scientists at the MRB has instigated the need for the present study. A trend of limited research communication and declining rate of success in peer reviewed publications is revealed in the organisation's annual report over a period of 10 years. In view of promising efforts from specially designed projects carried out within MRB, it is noteworthy to devote focus on timely publication of these findings that could otherwise end up as unpublished data. Writing proficiency in a research based organisation ranges between that of basic writers with remedial encounters and research writing by teams of experienced and established scientists. Linguistic

aspects of rubber RAs are under researched in the Malaysian context, indicating a research gap with regards to professional scientific communication and the overarching rubber RA publication discourse event. In aiming to address this research gap by means of discourse analyses on the rubber RA publication macro genre, this study will be centred on manuscripts submitted by a pool of researchers for publication in JRR. The comments in RRs, including those in which the authors provide replies to these feedback represent the dataset for this study.

Identification of the persistent and underlying issue due to insufficient backlog of submissions and limited manuscripts for publication in combination with the trend in rubber RA publication leads to a hypothesis that scientists within the organisation were contributing very minimally in writing. Taking into account a ten-year period between 2003 and 2013, the number of researchers in proportion to the number of rubber RA publications confirms this hypothesis. Data from annual reports of the MRB reveal these proportions as shown in Figure 1.1 below.

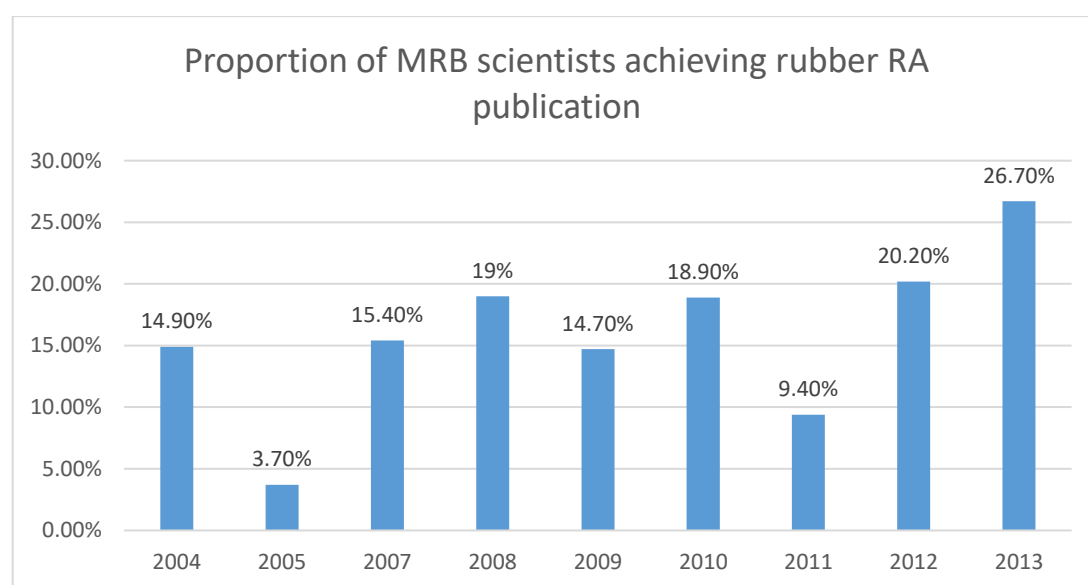


Figure 1.1: Trend of scientists' publication in MRB over a period of 10 years

An average proportion of 15.9% among scientists at MRB achieving success with rubber RA publication over the ten year period confirms this alarming trend. The highest proportion in the year 2013 involves 26.7%, while the lowest proportion in the year 2005 drops to 3.7%. The ten-year average indicates that only under 16% of scientists within the organisation are actively involved in scientific writing and achieving success with publication of rubber RAs in peer reviewed journals. The larger proportion of 84%, represents dormant effort among MRB

scientists in this regard and indicates a need for further exploration as well as assessment into both scientific writing and publication processes, with a focus on novice writers.

There has been no previous research, neither in a Malaysian context nor globally within the field of English for Research Publication Purposes focused on the discourse communities of authors, reviewers and editors in realising the rubber RA publication discourse event at a macro generic level. This research design encompasses a macro genre analysis of the overarching rubber RA publication discourse event triangulated with case studies and scientists' feedback on the issues of scientific writing as well as getting published. It represents a novel approach employing an original dataset that will reveal risks based on practices, whys and wherefores in view of achieving publication (or lack of it). Linguistic realisations and analysis on the genres of submitted and revised rubber RAs with respect to reviewer comments and ARRAs will highlight specific limitations of novice writers in getting published.

This analysis will be approached from the perspective of an editor, employing novel data sources from various phases of communication throughout the peer review process. This study proposes to increase the effectiveness of novice writers in empowering their variations with regards to composition of rubber RAs and access to success in achieving publication at an international level. Triangulation will be employed in data collection and analysis to garner the perspectives of Malaysian scientists in research and academia, and to represent contextual information. This, alongside a quantitative macro genre analysis of the publication discourse event that focusses on the genres of RRs, ARRAs, published and unpublished rubber RAs will reveal shortcomings in the processes of scientific writing and publication from a concurrent perspective of scientists' views and cultural practices.

1.4 Research Questions

1. What are the boundaries within which specific editorial decisions take place, as a result of the writers' use of particular linguistic resources which may have a bearing on their success or failure to get their works published in the Journal of Rubber Research?
2. What are specific points of contention revealed by the rubber RA publication macro genre analysis?
3. What is a potential contribution as a result of this research, towards improving the levels of awareness, understanding and engagement in cultural practices for RA publication among scientists in Malaysia?

1.5 Contributions and Significance of the Study

This research is rooted in Systemic Functional Linguistics (SFL), noting its inherent inclination towards the functional variation of language. It will serve a foundational role in exploring reasons behind unpublishable texts by inexperienced writers while examining the rubber RA publication process as a system through which a manuscript progresses based on preferred and dispreferred pathways within the discourse event, characterised as a macro genre. The theoretical framework of SFL will serve as the underpinnings of my research, driven by the fact that its theories of language are essentially context dependent. Viewpoints of genre theorists diverge on the prominence of social contexts as well as texts' linguistic features. The work by Martin and Rose particularly focuses on the notion of genre within the Systemic Functional Linguistics (SFL) theoretical framework, which offers a holistic model of how language functions to make meaning in a socio-cultural context (Martin and Rose 2007, 2009). Martin particularly views genre as “a system of social processes” (Martin 1992, p.494). More explicitly, “genre is a staged, goal oriented social process, social because we participate in genres with other people; goal oriented because we use genres to get things done; staged because it usually takes us a few steps to reach our goals” (Martin and Rose 2007, p.7).

The research design formulated for this study is based on triangulation of data and methodology, comprising four phases of analysis. The first phase is outlined by three case studies, to reflect the development of rubber RAs from the perspective of how they move through time, affected by a number of participants, namely the writer/author, the journal editor and the reviewers. Following this, the second phase represents a more meticulous quantitative analysis of the rubber RA publication macro genre, as a discourse event. Thirdly, I conduct a semantic coding analysis on the nature of RRs as well as ARRs within the dataset. The fourth and final phase of the study is based on a questionnaire distributed among scientists in research and academia locally for feedback on scientific writing and RA publication, and this provides a wider contextual lens in which to place the preceding chapters.

Based on the extensive literature review in the following chapter, there has been no substantial exploration into the overarching rubber RA publication discourse event and its realisation as a macro genre. In the Malaysian context particularly, genre analysis to reveal linguistic features of submitted and revised rubber RAs with respect to reviewer comments and ARRs are uncharted domains. These analyses, together with that of rubber RAs that are ultimately rejected, highlight specific limitations of novice writers in getting published. The case studies will probe the boundaries within which specific editorial decisions take place, as a result of writers' linguistic choices which may be related to their success and risk of failure

in achieving publication. The results and conclusions of this research will be applicable particularly to novice writers at the MRB specifically, though they are also important to academic publishing in general and linguistic study into this discourse event.

CHAPTER 2

Literature Review

2.1 Introduction

This chapter presents a theoretical background and critical literature review, beginning with a historical focus on RAs and the peer review process. The initial discussion then leads to a synopsis on journal ranking and subsequently introduces the notion of SFL and its suitability as the theoretical framework underpinning this research design with a focus on the strata of genre and register. These aspects interlink with a focus on discourse communities and the notion of genre, hence frame successive considerations on various contributions and perspectives of previous researches. A further focus on genres and analysis of the RA publication discourse event, confirms the knowledge gap. In that regard, previous findings reviewed reflect no prior work or realisation of the RA publication process as a genre of genres, or a macro genre, neither mapping the entirety of the discourse event stages and texts involved as a dialogic process nor the corroboration of original data as employed in the context of this research. Following this, a discussion on related SFL analysis in literature that show a relationship with the domains of scientific writing and RA publication is presented. A review on scientific discourse from an SFL perspective as well as the notion of grammatical metaphor (GM) is introduced as a consideration for potential influence and application in the context of the present study.

2.2 Historical Development of Research Articles (RAs)

Science communication by means of written texts in English can be traced back to publication of the first scientific journal entitled *Philosophical Transactions of the Royal Society*, in January 1665, by noting a contrast to preceding scientific writing in Latin. This journal served as a significant recount of science, reporting current findings in nature related research (Biber and Conrad 2009, p.157). Besides the common exchange of letters shared among scientists being published, there was the “experimental essay”, developed by Robert Boyle (Banks 2008, Montgomery 1996). It was introduced with a structured text type, comprising an introduction describing the study, followed by experimental procedures, successively noting results as well as a discussion and occasionally leading to a conclusion,

with hypotheses (Montgomery 1996, p.92-95). The experimental essay was recognised at this point by the scientific community in general.

The subsequent publication of Newton's *Treatise on Opticks* in 1704, in accordance to this text type, marks a transformation in the manner of documenting findings in scientific English for publication (Halliday 1993, p.57). Halliday affirms this on the basis of novel linguistic characteristics presented by Newton in this publication. The permanence of these features has influenced the progression of scientific English writing towards modern scientific discourse. This is noticeably portrayed in intricate clause complexes describing experiments, the introduction of grammatical metaphor as well as the use of passive voice in signifying impersonality and the representation of technical terminology by abstract nouns (Halliday 1993, p.57-62).

The variation in article length over time, while not necessarily an indication of quality, has fluctuated between ca. 5,000 words to ca. 10,000 words (Swales 1990). The division of RAs into sections was consistent only after 1950 (Swales 1990, p.114). However, the underlying reason of communicating scientific findings is preserved throughout this progression of RAs. The twentieth century has witnessed further validation of theories and evidence described in the RA, through citations and references to prior works (Biber and Conrad 2009, Montgomery 1996, Swales 1990). Introduction of the abstract in RAs was observed during the 1960s, predominantly in medical RAs (Swales and Feak 2009, p.1). The structural features of RAs have evolved over the centuries, resulting in narrowed focus on textual conventions and organisational elements consisting of the abstract, introduction, methodology, results, discussion, conclusion, acknowledgements and references.

2.3 Rationale of the Peer Review Process

Publishing research findings are fundamental to scientists' career development throughout their professional tenure. More recent work with a focus on science publishing, are that of Cho (2009); Dessen-Hammouda (2014); Huang (2010); Li (2006); and Martin et al (2014). There are those which examine generic structures of scholarly texts (Hyland 2015, Lim 2010), and those which specifically deal with peer review, such as Alfonso (2010); Coniam (2012); Fortenet (2008, which employs Swales 1996 to examine peer review as an occluded genre); Gosden (1995, 2001, 2003, the latter of which in particular also uses Swales 1996 to examine peer review as an occluded gatekeeping genre with negotiation); Matsuda and Tardy (2007, focussing on voice); and Mungra and Webber (2010, examining medical RAs via the occluded genre perspective).

Scientific publishing, however, is generally grounded on the basis of the peer review process to preserve both quality and novelty of published RAs (Coniam 2012). The construction of an RA involves extensive presentation of research findings as well as manuscript drafting stages towards a finalised submission to a specific journal. Upon evaluation of potential suitability, the author receives an acknowledgement from the editor's end. Further notification with regards to the peer review process is conveyed and complemented by an editorial decision through which acceptance, revision or rejection of the RA will be advised accordingly prior to publication (Ravetz 1973, Meadows 1974).

The peer review process is an esteemed practice, highly regarded within the academic and scientific community towards successful publication of an RA in a reputable journal. First adopted by the journal *Philosophical Transactions* in the 18th century (Kronick 1990), this gatekeeping activity has “achieved near universal application” as a significant part of the journal publication process (Jefferson et al. 2002, p.2787). Prevalent implementation of the peer review process dates back to the middle of the 20th century (Burnham 1990). Peer review has evolved as a “resource intensive process”, with a strong reliance on voluntary disciplinary subject specialists who review manuscripts submitted for consideration of publication to a journal (Jefferson et al. 2002, p.2790). It remains an essential measure of evaluation through which disciplinary knowledge of a particular field is built upon and verified, notwithstanding critiques over time (Horobin 1990). Peer review is a fundamental basis of the editorial decision on a manuscript (Bornmann and Daniel 2010). This process is further subjected to the editor's ability to comprehend reviewer recommendations in view of the scientific standing of the paper as well as its implications to future research (Stossel 1985).

The insightful role of a publisher comprises structured supervision and validation throughout the phases of peer review in anticipation of publication (Peters 1996). Therefore, the publication objectively emulates the specialised disciplinary community, rather than an editor's inclination and awareness of the subject (Peters 1995). Editorial board members are typically the primary choice of reviewers appointed by the editorial committee of a particular journal. Cautious appointment of editorial board members is key to the journals' reputation as they are characteristically recognised for noteworthy contributions in academia and expertise as subject specialists, researching and publishing work in the same field represented by the journal.

The beginning of the review process is marked by receipt of a submission upon which the manuscript is subjected to initial screening. There is a possibility of “desk rejection” by the editor at this stage (Swales and Feak 2009, p.2). Desk rejection can be based on the length of

a manuscript, either deemed excessively lengthy or lack in depth and data, commonly in the case of conference papers directly submitted as a RA. Other reasons include topic inaptness and a poor fit in relation to the journal's focus (Shugan 2007, p.592). Succeeding this first stage, the manuscript is sent to two or more well-suited reviewers, chosen by the editor based on the paper's content. In a single blind review process as adopted by JRR, reviewers comment on the merits of a RA "anonymously and confidentially" while the author's name is known to the reviewers (Greaves et al. 2006). Other variations are that of double blind review, whereby names of both authors and reviewers are not revealed, as well as a transparent review where both author and reviewer names are revealed (Fortanet 2008, p.27). Careful selection of reviewers has an effect in the value of their acute inspections and comments towards an unbiased verdict on the fate of a paper (Bornmann and Daniel 2010).

A journal editor's decision is generally based on two to three reviewer recommendations in the light of accepting the manuscript conditionally, recommending either a major or minor revision, or rejecting the manuscript for publication. However, requested revisions are only an indication of the manuscript's potential for publication upon incorporation of amendments and justification by the author in accordance with the reviewers and editor's recommendations (Feak 2009, p.19). Feak (2009) also defends the author's decision to accept and undertake the invitation to revise the manuscript in view of the editorial decision and comments entailed. She notes the author's perspective in pursuing or withdrawing the publication, subject to the nature of the requested revision. Upon revision, the manuscript is resubmitted together with the ARR, comprising detailed reasoning and explanation of how the manuscript was revised. This response is an important aspect in the re-evaluation of the revised manuscript by the editor and reviewers, prior to its acceptance for publication.

Allowing for the various phases that contribute towards the progression of a manuscript throughout the traditional peer review process, there are unavoidable delays between submission and acceptance for publication (Peters 1996, van Rooyen 1998, p.187). The average span of turnaround time for a manuscript ranges between six months to over a year, depending on the phases between submission and an editorial decision based on reviewers' recommendations, followed by the revision period prior to acceptance for publication. Reliability of peer review is an equally important weakness to be classified and assessed (Hemlin and Rasmussen 2006). In terms of inter-rater reliability (IRR), the degree of variation in reviewer ratings or agreement for a particular manuscript results in the lack of IRR (Marsh *et. al* 2007) and previous works confirm that there is generally a low level of IRR in peer reviews (Lindsey 1988, Cicchetti 1991, Campanario 1998, Weller 2002). Another issue

connected with the peer review process is the depth and extent of reviewer comments in a decision to reject the RA. Comprehensive constructive feedback on rejected manuscripts may present an opportunity for the authors to pursue major corrective measures and work on the amendments or modifications required in order to resubmit the paper for publication (Coniam 2011).

2.4 Journal Evaluation and the Impact Factor

As a global leader among information solution providers, Thomson Reuters, formerly Institute for Scientific Information (ISI), indexes significant literature meticulously through its multidisciplinary portals. Prominence of the Web of Science (WOS) is recognisable in its influence on research and innovation, linking researchers and publications worldwide. Service subscribers have access to retrieve more than a century's collection of influential journals and book series in natural sciences and social sciences, as well as arts and humanities. These records are comprehensively indexed to enable citation searches in view of tracking previous research as well as emerging research trends. In meeting the highest standards and coverage reliability, objective evaluation processes have been adopted, as explained by Eugene Garfield (1979), Founder and Chairman Emeritus of ISI. He refers to the Bradford Law, realising the fact that the majority of substantial findings in science are published by comparatively fewer journals. Therefore, not all published journals can be covered by Thomson Reuters.

Among other criteria of selection for a particular journal to be indexed in Thomson Reuter's database is the references cited by authors in published RAs. These citations, according to Garfield (1994) form marked implications of scientific concepts by generating connections between the author's research and prior work in the context of archived literature. This practice of explicit citations further infers valuable findings or theories in publications of previous research, realising noteworthy knowledge. Citation indexes are derived and listed in Thomson Reuter's databases from the abovementioned scholarly associations: namely, listing of both cited and citing works. Citation indexes were initially intended for information recovery via a range of strategies, including keywords, bibliographic coupling and linking publication through shared citations, among others. For instance, citations of a particular publication lead to a list of related publications, each of which contains reference listings for continuing the process of citation analysis. These citation based linkages are developed by authors and exist in the literature (Garfield 1994).

Traditional indexing approaches lack the edge of being essentially synchronised with literature, involving a delay due to manual computation of the information by experts. The

process involves categorising and scanning papers prior to making particular conclusions, coupled with a limitation of terms. The dominance of correspondingly high index entries in the Thomson Reuters citation indexes are due to the fact that current RAs comprise an average of 25 to 35 references. Key-Word Plus was introduced by ISI in 1990, in an effort to improve information retrieval alongside preventing unintended replication of previously established philosophies and novelties, by means of increased words and phrases from the title, in addition to keywords and abstract words present in a particular manuscript (Garfield 1993, 1994).

Citation analyses on publications indexed by Thomson Reuters are computed in Journal Citation Reports (JCR). This portal offers a range of user benefits including journal ranking and evaluation, collectively sustaining trends from the source data and half-life as well as both the cited and citing journal listings. Thus, JCR fulfils quantitative assessments in providing an explicit record of scientific literature, allowing a user to observe and monitor variations and trends in journals, noting that the title of a journal may not convey an accurate description of its focus. Nonetheless, Garfield (1994) quotes Christenson and Sigelman's (1985) study that the relationship between a journal's reputation and its impact is nonlinear.

The frequency of continuous evaluation and selection of journals at Thomson Reuters database is averaged fortnightly with newly added as well as deleted titles. All journals in WOS covered in Science Citation Index Expanded, Social Sciences Citation Index, or Arts and Humanities Citation Index, are scrutinised to uphold publication benchmarks by means of the said selection process. A range of qualitative and quantitative factors are accounted for in the evaluation, including the journal's basic publishing standards, its editorial content, the international diversity of its authorship and the citation data associated with it. Qualified editors with relevant educational background perform the evaluation and selection process by correlating the data to determine overall fortes and flaws of the journals.

Timeliness of publication is a prerequisite for initial inclusion in the Thomson Reuters database, as it implies a positive backlog of manuscripts to facilitate feasibility. Adherence to international editorial conventions by the journal is deemed essential, in view of comprehensive journal titles, article titles and abstracts, thoroughly formatted bibliographic information for all cited references and complete affiliation addresses of every author. The peer review process is an additional indicator of research quality published by a journal alongside the extensiveness of citations in an article. International diversity among contributing authors and Editorial Board members is equally preferred by the editors in an effort to promote international readership.

In the context of JRR, qualitative efforts undertaken over the span of two decades have revealed considerable improvements in various levels of the editorial process and exhaustive

bibliographic formatting as well as timeliness of publication according to its stated frequency. Nonetheless, this achievement necessitates an unceasing concern to sustain and enhance the quality of JRR in the light of improving its international ranking. Underlying challenges will eventually surface in the event of a considerable lack of manuscript backlog for publication. In that regard, my research puts into perspective the overlooked issues faced by novice writers, who form a large majority of the 150 researchers at the Malaysian Rubber Board. A detailed review of the theoretical framework is described and outlined in the following section on SFL.

2.5 Systemic Functional Linguistics (SFL)

Systemic Functional Linguistics (SFL) is an extensive model of language, introduced by Michael Halliday, founder of the linguistics department at University of Sydney in 1975. The theoretical framework of SFL will serve as the underpinnings of my research, driven by the fact that its theories of language are essentially context dependent. In that regard, the primary considerations of SFL are the form and function of language, together with the role of context in various levels of communication which provide the basis for genre, register and lexicogrammatical analyses, be it qualitative or quantitative (Halliday 1985, Halliday and Hasan 1989). SFL envisions language as a social semiotic, exemplified in the culture in which it is used (Halliday 1973, 1978, Halliday and Matthiessen 2004, Martin 1992). The social structures and systems which are an essential component of human life are construed by language, by means of constant exchange of meanings.

Throughout its development, SFL genre theories in particular have been mostly independent of both the ESP and New Rhetoric studies. SFL has a significant impact on language theory and education in Australia, as well as the various approaches to genre among its scholars. Language is linked to context through “texts”, reflected as realistic reproductions of social interaction, rooted in cultural and social contexts, systematically within SFL (Eggins 2004). This association is formed in the course of participation in an existing culture which is recognised by its social practices, synchronously epitomised in events and recognisably shaped texts (Halliday and Hasan 1985, p. 46). The systemic theory is comprehensive yet complex, characterised by its chronological advancements since 1970s (Halliday 1959, 1985, Halliday and Hasan 1989, Halliday and Matthiessen 2006, Martin 1992, Matthiessen 2007). The theory of SFL covers the aspects of stratification, metafunction and instantiation (Halliday and Matthiessen 2004, Martin 2007). The characterisation of each underlying feature of SFL will be described in further detail below.

Controversy on the relationship between genre and register has existed within the circle of SFL linguists (Couture 1985, Halliday 1975, 1978, Hasan 1995, Martin 1992, 1997, Yunick 1997). Couture (1985) argues that register controls the lexicogrammatical features of the text while genre control occurs at the level of discourse organisation, hence both ideas need to be studied individually. Likewise, Martin (1997) views both genre and register as “complementary perspectives on the social content of language” (p. 6). Halliday (1978) however, considered register as “semantic meaning potential within which linguistic choices are made” (p. 145) and genre as “a cultural and historical phenomenon which is involved in the realization of register” (Yunick 1997, p. 327). His stance deems genre secondary to register, which is inconclusive as register does not represent a text type, instead it initiates choices in the dimensions of field, tenor and mode. Halliday’s originally defined SFL theory includes context, semantics, lexicogrammar and phonology/graphology (Halliday 1975, 1978).

This stratification of language was extended by Martin (1992, 1999), yielding a different conceptualisation by dividing the level of context into two individual strata: genre (context of culture) and register (context of situation). This model was criticised as being inconsistent with Halliday’s theory while acknowledging its sophistication (Hasan 1995). On that note, Hasan believed that stratification of genre and register would cause a downfall “of the social and verbal” leading to a possibility of “pre-programmed” voices (Hasan 1995, p. 283). Martin emphasised his stance on context and its function as a semiotic system, whereby each stratum supplements “a layer of meaning to text” (Martin 1999, p. 30). Further, he highlighted the prominence of cohesion between register variables of field, tenor and mode to their respective metafunctions, in maintaining the grounds of SFL theory and explaining “why language functions in the way it does in terms of how language is used” (p. 31).

For that reason, he argues that register has a function in generating meaning potential while supplementing the generic staging of a particular genre in a specified culture. The concept of stratification implies various levels or strata, in the complex semiotic system of language (Halliday and Matthiessen 2004, p. 24). The SFL model initially only consisted of the register level, followed by semantics, lexicogrammar and phonology (Halliday 1978, Halliday and Hasan 1976, 1989). Additional strata of genre and ideology were presented later on by Martin (1992). These strata of language in SFL are modelled through the “metaphor of concentric circles”, whereby each stratum is a contextual realisation, increasing in magnitude of the focus of analysis, as illustrated in Figure 2.2 (Martin 1992, p.496).

Beginning with the rank of phonology, where syllables and phonemes are the focus of analysis, moving up to the level of lexicogrammar which focusses on the clausal level, followed

by semantics which is centred on paragraphs. The focus is refined at the level of register, being a stage in transaction, while the focus of genre is confined to whole texts and the ideology stratum is applied to discourses expressed through a range of texts (Martin 1992, p.496). Martin (1992, 1993) accentuates the need for a superordinate stratum to genre, i.e. ideology, in view of the evolving nature social interactional processes that comprise genres. Concisely, ideology embodies systematic coding orientation that constitutes a culture, actively associated with the “redistribution of power in a semiotic evolution” (Martin 1992, p.507).

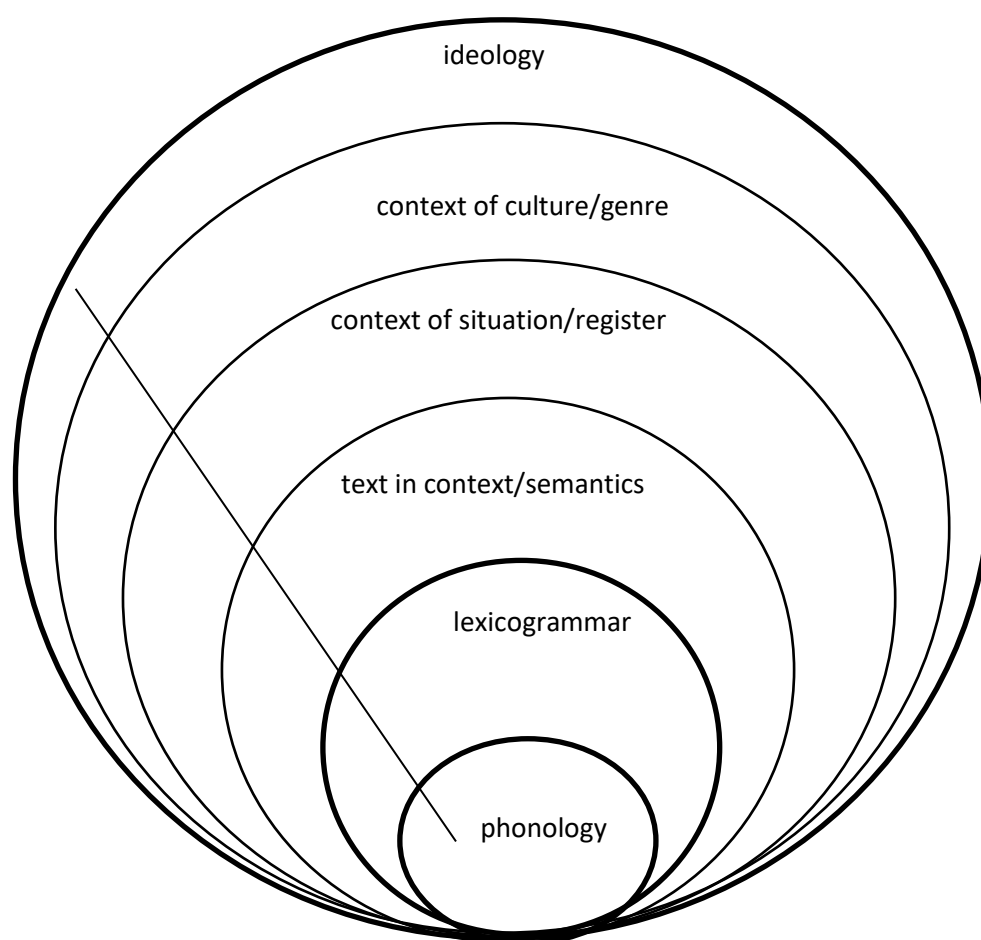


Figure 2.2: Stratified theory of text in context and its realisation as modelled in SFL (Adapted from Martin and Rose 2009)

Genre and register are equally associated in analysing language within the SFL framework. In an approach to define both terms, it would be noteworthy to review ideas of SFL scholars about genre as a whole and the genre of science, noting the emphasis of my research underpinnings on SFL macro genre analysis of the scientific RA publication discourse event. Martin and Rose (2009) reiterated a working definition of genre as a staged, goal oriented social process that characterises the writers shaping text types comprising various stages toward

accomplishing a specific goal for a particular social purpose and readership. Their earlier coined definition notes “genre is a staged, goal oriented social process, social because we participate in genres with other people; goal oriented because we use genres to get things done; staged because it usually takes us a few steps to reach our goals” (Martin and Rose 2007, p.7).

Alternatively, Eggins (2004) defines genre as “When we describe the staged, structured way in which people go about achieving goals using language we are describing genre” (p.10). She further emphasises the implication of daily routine in the course of time and energy savings, to validate the requirement of genres in language. Bakthin, as quoted by Eggins (2004) affirms his view on the need for genres:

“If speech genres did not exist and we had not mastered them, if we had to originate them during the speech process and construct each utterance at will for the first time, speech communication would be almost impossible. We learn to cast our speech in generic forms and, when hearing others speech, we guess its genre from the very first words; we predict a certain length and a certain compositional structure; we foresee the end; from the very beginning we have a sense of the speech whole.”

(p.57)

From the functional linguistics perspective, this implicates the definition of genre as a cyclical pattern of meanings that endorses social practices of a given culture. The concept of obligatory and optional staging within a genre was introduced primarily in the works of Mitchell (1957) and Hasan (1977), drawing on texts’ schematic structure. Hasan’s obligatory stages for appointment making were specified as Identification ^ Application ^ Offer ^ Confirmation. Hasan’s (1985) model for Generic Structure Potential (GSP) and Halliday’s (2007) work on features of scientific discourse are valuable and applicable theoretical frameworks that serve to realise the progression of RAs in my dataset. Hasan (1985) defines an element as “a stage with some consequence in the progression of a text”. A contextual configuration (CC) is Hasan’s (1978) concept in introducing a specific set of values which denote options or possibilities with regards to register variables of field, tenor and mode. She describes the structural unity of texts (Hasan 1978) as a combination of these features and the central role of CC to account for elements of the social activity.

Hasan acclimatises the stages and additional optional stages together with their linguistic realisations in accordance with Halliday's social context variables, i.e. field, tenor and mode. Social context, as described by Halliday (1978) is "the total environment in which a text unfolds" (p.5). Martin (1992) devised an influential philosophy of language and its semiotic environment to eradicate rigidity that arose from the conflicting understandings within SFL vis-à-vis the connection between field, tenor and mode with genre and register, which was acknowledged predominantly by SFL scholars.

The interpretation of the relation of language to social context is explained in SFL as three strata: namely, text in context representing semantics, context of situation representing register and context of culture representing genre (Martin and Rose 2009). The association between these strata represents the notion of "realisation" in SFL, a concept that resembles symbolisation, encoding, expressing, manifesting and similar meanings as described by Martin and Rose (2007). Lemke, as quoted by Martin and Rose (2009) relates the concept of realisation with 'metaredundancy', whereby patterns of meaning at each stratum are realised (symbolised / encoded / expressed / manifested) in relation to all the lower strata. Variations in the context of situation are linked to social functions of language through the dimensions of field, tenor and mode (Halliday and Martin 1993, Martin 1992, Martin and Rose 2007), as categorised by Halliday (1985).

Field denotes the nature of the social action taking place concerning topic of discourse and what it is that the participants are engaged in, where the element of language is required; Tenor indicates the roles and nature of relationship among participants involved, the types of speech roles they are taking on in the dialogue and the whole cluster of socially significant relationships in which they are involved; Mode represents the purpose and the symbolic organisation of the text, the status that it has, and its function in context (Halliday 1985, p.12). In addition to these strata is the communicative plane of ideology, realised by genre, register and language / semantics as its expression form. Distinction of genre / context of culture formation are subjected to the identification of field, tenor and mode values, which represent the dimensions of the register / context of situation by means of recurrent patterns that ultimately stabilise within a culture (Martin 1992).

Eggins (2004) explanation of the register theory presents the three register variables pragmatically, i.e. field as topic or focus of the discourse; tenor as role relations of power and solidarity between participants of the discourse; mode as amount of feedback and role of language in the discourse, with remarkable intuitive variation among discourses (p.9). To that effect, she pursues the justification of the development of genre as linguistic recurrence of

register variables within a discourse community, in relating both genre and register whereby the process ultimately leads to formation of a genre (Eggins 2004, p.58).

Based on the abovementioned definitions of genre by various SFL linguists, it can be deduced that in the context of culture, genre is interceded by a concrete context of situation by means of register and its variables (Christie and Martin 1997, Martin 1984, 1985, 1992, 1999). In consequence, recurrent global patterns of text, including a selection of defined text types above, are recognised as genre. In contrast, staging within the genre is recognised as a schematic structure which is linked to recurrent local patterns (Martin and Rose 2009). This notion underlies text structure and its generic staging in reference to particular text types comprising the following genres: recounts, which are based on absence of sequence of events; reports, presenting generic facts; descriptions, presenting specific facts; procedures; explanation; protocols; narratives; observations/comments, which are based on presence of sequence of events.

The metafunctions introduced by Halliday in the 1960s are the functional roots of grammatical phenomena, consisting of the ideational, interpersonal and textual. Halliday and Matthiessen draw attention to the terminology “metafunction”, specifying that functionality is essential to language in systemic analysis as language has evolved its structure alongside function. Hence, “metafunction” suggests the fundamental role of function within the SFL theory (Halliday and Matthiessen 2004, p.31). Eggins (2004, p.76) relates that register variables field, tenor and mode affect language use, hence “it is possible to identify parts of the language system that are concerned with realising each type of the register variable”. The association of these variables to the three semantic metafunctions of language are described in detail below. In that regard, the metafunctions share an orderly relationship with the lexicogrammar stratum of language and enact language in a specific social context (Bloor and Bloor 1995, p.9, Martin and Rose 2007).

Halliday and Matthiessen identify two fundamental roles of language, the first being the ideational metafunction which enables language users to construe their experiences of reality in the form of text. This is made possible by means of various categorisation and configuration of complex grammatical patterns, both materially and symbolically. It provides “the potential for creating, maintaining, and revising knowledge in the form of meaning” (Matthiessen 1995, p.17). The transitivity in a clause is able to represent this realisation systematically, as it is divided into three functional constituents: participants, processes and circumstances. It is further classified into logical and experiential domains in relation to the construction of formal activity, noting human experience (Halliday and Matthiessen 2004, Martin and Rose 2009).

The ideational metafunction is linguistically realised in the field of discourse, as it correlates with the nature of social action taking place as well as what the participants are engaged in, while characterising texts lexically by means of specialised terminology.

The second fundamental role of language is the interpersonal metafunction, defined as a resource for enacting language as social actions, specifically roles and relationships between participants in a discourse situation (Matthiessen 1995, p.17). It provides participants of the discourse with interpersonal resources realised as the mood function. It is linguistically realised in the tenor of discourse, i.e. expert to expert in RAs (Martin and Rose 2007). Halliday and Matthiessen (2004) indicate another aspect of meaning besides the basic functions of language, the textual metafunction. It is concerned with the organisation and flow of information within individual clauses and across the whole text (Martin 1997, p.21), that creates cohesion and continuity within the discourse, in sequence (Halliday and Matthiessen 2004). The textual metafunction facilitates the organisation of text in context by means of presenting both the ideational and interpersonal metafunctions (Cloran 1995, p.382). The textual metafunction also serves to keep discourse participants in the know with regards to construing and interpreting the text (Matthiessen 1995). This metafunction is linguistically realised in the mode of discourse, which represents symbolic organisation, and realises the communicative process' channel and medium. From the perspective of RAs, they signify an indirect, non-face-to-face communication, while the medium of communication is written-to-be-read (Halliday and Hasan 1989).

A preliminary analysis specific to JRR at the level of register in the context of situation and culture serves to indicate the baseline of this research. This analysis is considered from the aspect of register variables field, tenor and mode of discourse as depicted in Figure 2.3, within the context of situation. These roles will express specific genres or text types representing the context of culture, within the genre cluster comprising the macro genre of the RA publication discourse event that will be analysed in the course of my study. In illustrating the notions of genre and register, Irwin and Joavanovic-Krstic (forthcoming) claim “the context of culture influences how we use our language to shape meanings”, while “the context of situation is time-specific”. They assert that the concepts of field, tenor and mode are completely pertinent to writers, recognising “extralinguistic features” of a specific text in line with its implication (Irwin and Joavanovic-Krstic (forthcoming), p.191).

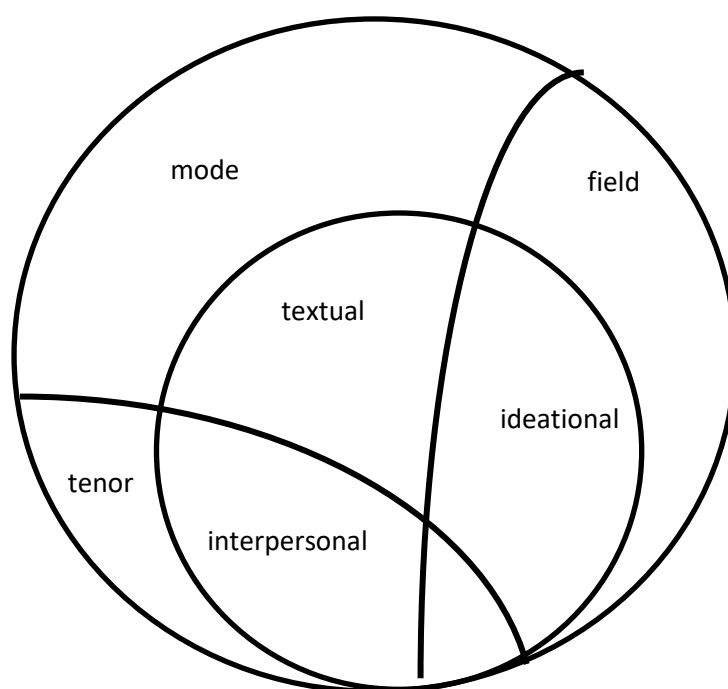


Figure 2.3: Field, tenor and mode in relation to metafunctions
(Adapted from Martin and Rose 2009, p.12)

As stated previously, genre is defined by Martin and Rose (2009) as a staged, goal oriented social process that characterises the writers shaping text types comprising various stages toward accomplishing a specific goal for a particular social purpose and readership. Hence, texts of a specific genre have common features and expectations (Irwin and Joavanovic-Krstic (forthcoming), p.194). In an effort to classify the elements of fundamental genres within the genre cluster of RA publication, the following Table 2.1 adapted from Irwin and Joavanovic-Krstic (forthcoming) contains a description of these genres along with their purposes and structural expectations.

Text type	Purpose and Structural Expectations
Scientific RA	A formally structured document which attempts to communicate original results of research and authoritative reviews within a discipline specific discourse community. The structural features of RAs have evolved over the centuries, resulting in narrowed focus on textual conventions and organisational elements with the following generic structure: Abstract^ Introduction^Methodology^Results^Discussion^Conclusion^Acknowledgements^References. SFL registerial variables of field, tenor and mode of

	discourse are realised by this genre in the following manner. The scientific and technical content conveyed in the RA, coupled with meta-linguistic characteristics of Scientific English are reflective of field of the discourse. Tenor of the discourse is reflected by the author's social purpose and goal in communicating research findings via the RA, to the audience/readership represented by peers and discipline specific experts (reviewers). While the primarily textual nature of the genre, coupled with visual illustrations of results and data reflect modal concerns of the discourse.
RRs	A formal appraisal of an RA from the perspective of a subject specialist, who comments anonymously on the merits of the paper, based on a set of criteria or questions provided by the journal. It is generally organised as a formal report pertaining to the decisions to accept conditionally, requesting either a major or minor revision and in some cases reject or request a resubmission. The report is enclosed with the reviewer evaluation form, as well as separate comments to the author and editor, respectively. An exhaustive RR usually contains an annotated RA, with highlighted details to be considered by the author. The field of discourse is reflective of the subject area of the RA, while the mode of discourse is textual. However, the tenor of the discourse reflects power relations, considering the effect of reviewer suggestions and comments on the outcome of the peer review process and ultimate Editorial Decision on the RA.
ARRs	A formal response in the form of a report enclosed with the revised RA or part of a letter to the editor, which contains an outline of how the RA was revised. This response, together with the revised RA will usually be re-evaluated by the editor or reviewer in the event of reiteration of the stage of Evaluation, prior to the subsequent editorial decision on the RA. It represents a polite yet professional negotiation, discussion and justification in writing by the author. The field and mode of the discourse is directly correlated with that of the RRs as amendments and improvements to the revised RA are described and justified accordingly. The tenor of discourse relies heavily on the author's reaction towards proposed modifications as well as efforts in clarification and responding comprehensively to both editor and reviewers. The strength of the discourse lies in the author's ability to acknowledge reviewers and editors'

	efforts followed by a rationale in supporting or confronting specific comments in line with incorporated amendments and their suggestions, avoiding lack of politeness and clarity.
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Table 2.1: Fundamental genres in the RA publication discourse event

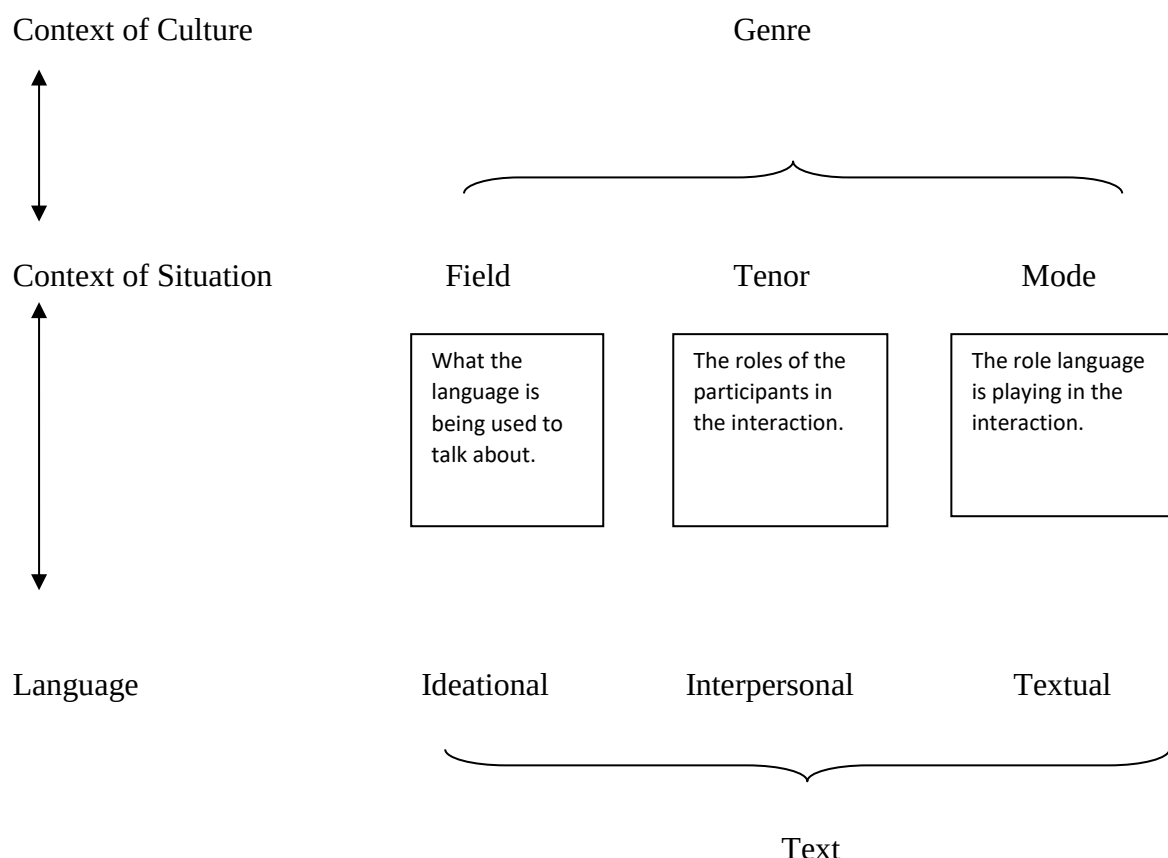


Figure 2.4: Register variables, metafunctions and context in text (Adapted from Bawarshi and Reiff 2010, p.33 as quoted by Irwin and Joavanovic-Krstic (forthcoming), p.201)

Figure 2.4 above illustrates how the context of culture (genre) is associated with the context of situation (register). The relation between genre and register are symbolised by the register variables of field, tenor and mode, “contextualised through language and realised lexico-grammatically through the ideational, interpersonal and textual metafunctions” (Irwin and Joavanovic-Krstic (forthcoming), p.202).

Distinctions between the three semantic metafunctions in SFL are indicated to facilitate individual scrutiny, noting that all these functions are interlinked as a discourse unfolds and their social functions are realised instantaneously (Martin and Rose 2007, p.7). The understanding of ideational, interpersonal and textual meanings within the context of culture

and the context of situation, construes social reality in a particular way. From an SFL perspective, language users are offered a system of choices with a significant realisation of meaning in the form of systematic descriptions with regards to how texts are shaped by context (Halliday 1973, Martin 1992, Martin and Rothery 1980). This view marks a distinction of the SFL theory compared to other language models, representing a comprehensive system of meaning in texts with semiotic strata diffusing a layer of meaning at each level (Hood 2010, p.23).

Having discussed both stratification and metafunctions, the third parameter of SFL's multidimensional model, instantiation, is concerned with the relationship within the language system, which realises languages' fundamental potential and its instances in the form of texts (Halliday and Matthiessen 2004, p.26, Martin and Rose 2007, p.333). The process of instantiation is identified by the determination of register variables field, tenor and mode. Instantiation introduces three internal parameters, namely axiality, rank and delicacy. Axiality relates to the paradigmatic and syntagmatic ordering in language, i.e. "with patterns of choice in what goes together with what" (Halliday and Matthiessen 2004, p.22), while rank is concerned with the units within the paradigmatic and syntagmatic axes, e.g. clauses, phrases, groups and their associated complexes. Delicacy, on the other hand refers to the type-subtype relation organising paradigmatic axes (Halliday and Matthiessen 2004, Teich 2003).

2.6 The Concept of Discourse Community

Discourse communities have been characterised by previous researchers as subject specialists who aim to achieve scientific and professional goals among themselves, in a defined perspective while sharing specific practices of language (Kuhn 1970, Bizzell 1992). The earliest view of a speech community, was posited by Firth (1950):

"A speech fellowship sees itself and hears itself as different from those who do not belong. Such speech, besides being a bond among the fellows, is a bar to the outsider. Local dialects, regional and occupational dialects, as well as the accents of the big English public schools are speech fellowships."

(p. 2)

Further affirmations on this prevailing and valuable concept in subsequent works have also acknowledged individual views and feedback as a result (Bizzell 1992, Hyland 2002a, 2002b,

Mauranen 1993b). Swales (1990), further defined the view of a discourse community, in the form of written communication to realise specific objectives. He asserts the purpose of a discourse community differently from that of a speech community, focusing on a professional and academic perspective. A discourse community according to Swales thus possesses criteria comprising a broadly agreed set of common public goals, mechanisms of intercommunication among members, participatory mechanisms used primarily to provide information and feedback, the use of one or more genres to communicate and advance its aims, some specific lexis and a threshold level to determine the level of relevant content and discourse expertise required to be a member.

However, considering the diversity in social as well as individual roles in these communities, he conceded two categories: a “placed discourse community” referring to a local group whose members share similar work, genres and purposes, as well as a “focus discourse community” whose members are separated by time, language and geographical location while participating in discursive practices with a shared purpose (Swales 1998, p. 201). Swales’ study assessed the significance of three discourse communities, who were groups of people belonging to different disciplines who shared a university building. Both classifications of discourse communities apply to the present research in the sense that Malaysian reviewers and authors, within the circle of JRR, are placed discourse communities. On the other hand, reviewers and authors from different geographical locations, participating in specific phases of the peer review process, correspondingly form focused discourse communities with the former group. In addition to this classification, the writers’ textual production is reflected upon stabilising the genre based on specific epistemologies.

The notion of a discourse community should always be subjected to transformation and growth, driven by structure and scope of the discourse, as cautioned by Prior (1998). Likewise, authors and reviewers of a particular journal are constantly evolving over time, in view of new members as well as those leaving the respective discourse communities, the vigour affecting both composition and size of these groups. The three discourse communities studied as part of my research are persevering towards disseminating novel findings in the field of rubber research. Acknowledging that English is the language of communication in these discourse communities, the existence of native and non-native speakers reveals a further distinguishing stance.

Canagarajah (1996, 2002) argues that no matter how rigorous their science, researchers’ lack of mastery of the genre conventions and thus their lack of power in discourse excludes their work from international journals. The dominance of English has established global

standards of publication in the context of scientific RAs, requiring novice writers to develop discipline-specific English skills (Cargill and O'Connor 2009). It is essential for the information presented in RAs to be structured according to specific rhetorical patterns, which includes form and structure, in order to avoid undesirable reviewer feedback or rejection (Adnan 2009).

Views reflected on RA writing strategies are generally rooted in the context of native writers (Silvia 2007, Cargill and O'Connor 2009, Altbach 1978, Bazerman 1988, Anthony 1999). These recommendations often lack the specificities to address weaknesses of non-native writers, which arise due to cultural differences (Al-Khairi 2013, Ahmad 1997, Kourilova 1998, Mirahayuni 2010, Vasconcelos 2007). The growing prominence of English in scholarly communication has been emphasised in literature (Swales 1990, Hyland 2000, Oommen 2012, Bhaskar and Soundiraraj 2013), and in conjunction with the language incompetence observed among non-native researchers (Canagarajah 1996). Fundamental knowledge with respect to composition in the form of RAs is essential to scientists in view of publishing their research findings.

Ethically situating research in writing by means of appropriate citations and recognising earlier work in the light of discussing previous findings displays one's capability and dedication towards publication (Hyland 2000, p.20). In an effort to actively disseminate developments resulting from research, scientists must engage in communicating their findings effectively and in accordance with practices within the discipline. This study will contribute in assisting Malaysian novice scientists and inexperienced writers by means of writers' acculturation, in realising the international discourse community conventions while accomplishing progress in international publication.

2.7 Genre: Theoretical Views

The notion of genre has been multifaceted since its introduction, traceable to its classification in the disciplines of arts, literature and media. There are complex definitions of genre introduced in the literature, which range from a means to sustain a category of texts to that of dynamism in forming discursive social purposes (Bawarshi and Reiff 2010, p.4). Evolving practices and traditions allow for a better understanding of genre. It is essential to reflect on the earliest theoretical views in order to comprehend the purpose of genre in publications. In the domain of ethnography, it has been recommended that situations and genres be considered as two separate media of communications, bearing in mind that speech events have their own communicative purposes (Hymes 1974, p.61, Preston 1986). Conversely, this

logic was deemed unacceptable by Swales (1990), who notes that both the speech event and genre are linked through a communicative purpose. The classifications of genre are related as a result of associating communicative purpose and social processes, generating “communicative vehicles for the achievement of goals” (Swales 1990, p.46). There has been substantial emphasis in academic and professional disciplines concerning the exploration of genre.

Other interpretations of genre in literature include that of Mauranen (1993c), who defines genre as “a class of discourses which have the same primary function” (p.18) and Fairclough (2003) explains genre as “discoursal aspects of ways of acting and interacting in the course of social events” (p.65). Apart from other researchers’ definitions on the theory of genre (cf. Bawarshi and Reiff 2010, p.3, Biber and Conrad 2009, p.21-23, Hyland 2009, p.26), Bhatia’s (2002) definition of genre analysis is “the study of situated linguistic behaviour in institutionalised academic or professional settings” (p.22). He further describes genre as “essentially referring to language use in a conventionalised communicative setting in order to give expression to a specific set of communicative goals of a disciplinary or social institution” (Bhatia 2004, p.23).

Genre analysis has been broadly engaged in linguistic research with regards to English for Specific Purposes (ESP) as well as rhetorical analyses over the past decades by Swales (1981, 1990, 2004), among others (e.g., Bazerman 1994, Hymes 1974, Saville-Troike 1982). The scope of genre analysis encompasses “a range of tools and attitudes to texts, from detailed qualitative analysis of a single text to more quantitative counts of language features” (Hyland 2009, p.25). Hence, within the category of academic discourse there exists a constellation of written (e.g., RAs, conference abstracts, PhD theses, grant proposals, monographs, textbooks, book reviews, etc.) and spoken (e.g., lectures, seminars, colloquia, office hour meetings, PhD defenses, etc.) genres (Hyland 2009, Swales 2004).

In general, genre analysis is initiated by means of identifying a specific genre within a discourse community and depicting the anticipated communicative purpose to be achieved. Successively, the genre is organised according to rhetorical move categories as theorised by Swales, alongside analysing textual and linguistic features realised by those moves. The anticipated application of this approach, however, is a pedagogical contribution on ESP for native and non-native speakers (Swales 1990, p.232). Criticisms on the approach of genre analysis include arguments on the effects of teaching genre, which may result in the reproduction of dominant discourses constructed and maintained by powerful and social relations (Hyland 2003, p.25) as well as its excessive centralisation on particular rhetoric

approaches while disregarding fundamentals of a collective philosophy in language (Bhatia 1993). Likewise, the implication of the approach in view of “its focus on direct transmission of text types may lend itself to an uncritical reproduction of a discipline rather than leading to a critical appraisal of that disciplinary corpus, its field or its related institutions” (Luke 1996, p.314).

Berkenkotter and Huckin developed a theoretical framework of genre conception that genres are the media through which scholars and scientists communicate (Berkenkotter and Huckin 1995, p. 1). Their research was grounded on the notion of prominent disciplines and writers as well as the structuration theory, bringing about development of five frequently cited principles, including dynamism, situatedness, form and content, duality of structure and community ownership (Berkenkotter and Huckin 1995, p.4). Initial linguistic justifications of genre were presented mainly by Grabe (1987) and Biber (1988), who focused on quantitative analyses of text on linguistic and lexicogrammatical features. The latter work symbolises a broad corpus based genre analysis research, where Biber presented a cohesive linguistic analysis encompassing an extensive range of spoken and written registers. Results of the analysis led to the validation of co-occurring patterns in each genre, namely nominalisations/passives and pronouns/contractions. Advances in corpus linguistics and computer technologies have been favoured in genre analysis, with due respect to the value of reliability of the data source, together with repeatability and rapidity of the analytical methodology applicable to large quantities of data. As quoted by Swales (2004):

“In this increasingly technological world, there is one more specialized software development of particular relevance to genre-based studies and applications. This is corpus linguistics, some collection (or corpus) of electronic texts plus some appropriate concordancing software, which permits assembly of key words in context, instant word frequency lists of various kinds, and distributional plots of selected words and phrases. At the time of writing of Genre Analysis, corpus linguistics was in its infancy, and there was almost no corpus material easily available that was directly applicable to those working in EAP and ERP (English for Research Purposes).”

(p.8)

Dudley-Evans introduced the view adopted by ESP scholars on genre: that its characteristic features of style and form are recognised by those who use the genre, further citing the RA as

an example with a significant degree of standardisation in terms of purpose, layout conventions, form and style (Jordan 1997, p.231). The dawn of computer-based corpora and evolving ideas of genre analysis reintroduced register analysis. With a focus on grammatical features of texts within corpus linguistics, quantitative data analysis by means of concordancing programs relayed discursual features of specific texts (Dudley-Evans and St John 1998). Furthermore, as postulated by Dudley Evans and St John (1998), the ESP approach denotes that discourse analysis encompasses all forms of text analysis and genre analysis is a sub-category of it (p.87).

Viewpoints of genre theorists diverge on the prominence of social contexts as well as texts' linguistic features. The work by Martin and Rose (2007, 2009) particularly focuses on the notion of genre within the Systemic Functional Linguistics theoretical framework which offers an all-inclusive model of how language functions to make meaning in a socio-cultural context. Martin (1992) particularly views genre as "a system of social processes" (p.494). This concept and the SFL framework associates fundamentally with the underpinnings of my research, considering the semantic qualitative analysis of the RA publication discourse event as a macro genre.

2.8 Genres within the RA Publication Discourse Event

The notion of genre cluster was introduced by Feak (2009) in reference to the macro genre associated with the RA publication discourse event, which is directly influenced by the peer review process. She summarises that genres associated with the RA publication discourse event comprise a range of "under-researched texts", characterised likewise by other researchers (Feak 2009, Godsen 2001, Fortanet 2008). The term "occluded" genre was coined by Swales (1996), who defined it as "academic texts that were hidden from public view, but were nonetheless an important part of the genre network of scholars and researchers" (p.46). Swales classifies the peer review of RAs submitted to journals as an occluded genre, considering that reviewers are mostly anonymised and their confidential reports are usually not part of the official publication records (Godsen 2001). Godsen (2001) specifies the limitations in studying both genres of peer review reports and ARRs compared with the analysis of published genres.

Feak identified a possible RA publication genre cluster as illustrated in Figure 2.1, encompassing genres that contribute towards the RA publication discourse event. I have attempted to further categorise the RA publication genre cluster to ascertain a fundamental macro genre amid this constellation, representing the entirety of the discourse event. On the contrary, "supplementary" supporting documentation as well as "uncommon" genres are comparatively inconsequential in nature. Fundamental genres within this macro genre

encompass submitted and revised manuscripts, reviewer evaluation reports, responses to reviewers and published RAs. These genres represent important discourse events in the context of RA publication, representing corpora of texts that can be further subjected to distinct genre and linguistic analyses. A comprehensive appraisal to investigate the motivations of communication for the entirety of this discourse event will contribute significantly to the journal quality.

Previous works on fundamental genres of the RA publication discourse event, specifically RRs and ARRs, are described below. These studies are carried out in an effort to recognise the genre specific features as well as formal and functional characteristics of specific discourse communities manifested in linguistic and rhetorical terms. Fundamental genres within the RA publication discourse event and genre cluster have been the focus of increasing research over the last two decades. These studies are varied in the nature of the RA disciplines and underlying considerations based on the selected corpus. However, from an editor's perspective, each of these genre analyses serves to improve and maintain the journal quality (Belcher 2007, p.4). Challenges faced by novice writers have been highlighted by Godsen (2001, p.4), noting the expectations in writing the response to reviewer comments to their disadvantage.

The significance of understanding and interpreting RRs has been examined in the light of the ARRs (Fortanet 2008, p.29, Godsen 2003, p.88). Although both the genres of RRs and ARRs appear secondary to the more central task of writing an RA, they have a strong influence on the prospects of publication (Feak 2009, p.20). Getting published implicates a dialogue between reviewers and authors (Godsen 2001, p.10), regarded as a polite and professional conversation which involves negotiating and discussing amendments (Benfield and Feak 2005). Johnson (1992) has reported her analysis on forms, strategies and functions of complimenting discourse strategies in peer review. She argues that writers employ these strategies towards establishing and sustaining relationships, while mitigating inclusively "genre-specific face-threatening acts" (Johnson 1992, p.51).

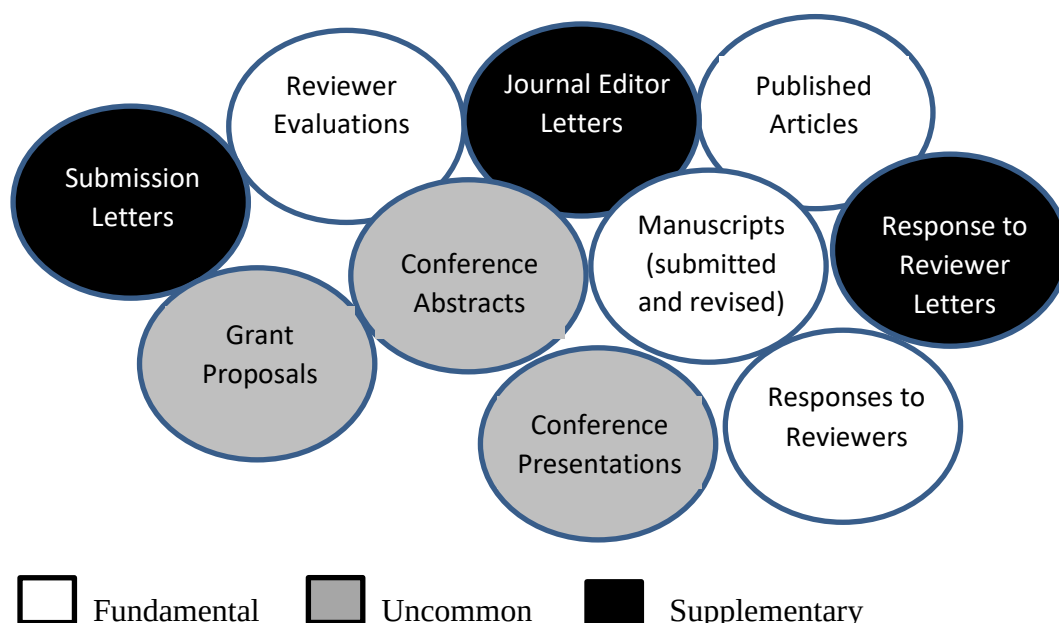


Figure 2.1: RA Publication Genre Cluster (Adopted from Feak 2009, p.18)

He (1993) applied the SFL approach to examine a corpus of peer review texts in the lines of its discourse goals, global text structure, obligatory and optional elements, sequence and co-occurrence of discourse elements, verb types, modalised directives and lexical choice. Her results demonstrated that peer review texts represent the institutional and situational contexts they are embedded in, while contributing to them. Godsen (1995) focuses on textual revisions of scientific RAs by non-native speaker novice researchers, using the SFL framework of text analysis coupled with an interpretive commentary to reveal the processes of interaction between ‘inexperienced’ novice and ‘expert’ RA writers of the scientific discourse community. He hypothesised that “success can be judged from the processes of peer review, negotiation, revision, and eventual acceptance for publication of RAs in English-language scientific journals” (p.38). Therefore, achieving publication in a peer reviewed journal introduces non-native speaker novice scientists into the international research community.

Godsen (2001) presented another SFL analysis combined with a functional description of reviewer comments and authors’ replies, to contribute towards successful revision of RAs. His findings relate the authors’ ability to recognise and interpret the orientation of requested revisions. He quotes among others, Fox (1983), who indicates that research on publication productivity in the sciences has highlighted the significance of initial output as a reliable predictor of an individual’s publication prospects. Fox (1983) also emphasised that a scientist’s initial publication will lead to a practice and eventually sustain their productivity (p.293). Godsen’s subsequent research focuses on the challenging task faced by novice researchers

upon submission of their initial RA for publication to an international journal. He claims the outlining of ARR as a “complex process requiring considerable socio-cultural sensitivity and pragma-linguistic competence” (Godsen 2003, p.87). In this study, he analysed and described relevant features in a corpus of scientific peer review reports. Results of the analysis shed light on the interpretation of reviewer criticisms in the reports, highlighting the exceptionally interpersonal orientation of referees’ concerns, with two-thirds of all comments in the corpus focusing on interactional deficiencies to be addressed accordingly by novice authors. Godsen summarised the underlying motivation contained in the comments, noting revision of the technical subject matter (ideational), the effectiveness of the writer's interaction with the reader in the text (interpersonal), or an aspect of the text itself, for example, its format or length (textual).

Fortanet (2008) analysed RRs in the fields of applied linguistics and business organisation resulting in the identification of significant evaluative features and their pragmatic value as direct or indirect requests. Among key evaluative features from this study are the linguistic patterns of criticisms, recommendations and requests through questions. Disciplinary differences indicate fewer indirect requests in the linguistics reports. It is thus important for referees and editors in business organisation to consider the target readers of their reports. These evaluative features and associated nature of direct and indirect requests assist authors in comprehending reviewer demands. Feak (2009) presented an initial analysis on a small corpus of ARR of medical RAs and attempted to highlight key characteristics of the texts. Based on her findings she suggests that “It is likely that experience would have an effect on the shape of the ARR, with experienced authors being more aware of the need for clarity regarding the changes in the manuscript or knowing that reviewer suggestions can be rejected” (p.33). Correspondingly, she explains that author responses are “a polite discussion in which professionals can agree to disagree” (p.34), hence the pertinence of an author in distinguishing a balance between the revisions requested and the interactive dialogue with the reviewers they are responding to is deemed significant.

A study on reviewer comments, based on a corpus of reviews provided by a single reviewer over an eight year period was carried out in two stages by Coniam (2011, 2012). The preliminary analysis delineates reliability of the reviews by the specific reviewer, compared with other reviews for a specific paper in terms of inter-reviewer correlation. Successively, verdicts on the manuscripts are associated with the length or depth of the reviews as well as the probability of rejection between qualitative and quantitative studies in the RAs (Coniam 2011, p. 539). Coniam (2012) reports a substantive analysis of the corpus, exploring author

related issues. From the perspective of the chosen reviewer, he perceived that criticisms were specific to the respective manuscripts and not based on the analysed criteria or biases. Coniam summarises the ratio of negative to positive comments identified, as a reflection on the part of the authors towards aspects of their own writing.

2.9 Genre Analysis of RAs

Perceiving the effects of genre analysis on the relation of purpose, context and discourse structure of texts, additional researches have focused on move analysis in RAs of several disciplines over the past three decades. Previous works on the structure of RA sections include those on the Introductions (Anthony 1999, Samraj 2002, Swales 1981), Methods (Cotos, Huffman and Link 2017, Lim 2017, 2019) Results (Brett 1994, Thompson 1994, Kwan and Chan 2014), Discussion (Hopkins and Evans 1988, Basturkmen 2012) and Abstracts (Melender, Swales and Fredrickson 1998). Researchers in this tradition seek the stages employed by various discourse communities in an attempt to analyse their genres.

Swales defines a move as a discursial or rhetorical unit that performs a coherent communicative function in a written or spoken discourse that can be realised by a clause at one extreme and several sentences at the other (Swales 2004, p.29). In contrast, Ngowu defines move as a text segment made up of a bundle of linguistic features (lexical meaning, propositional meanings, illocutionary forces, etc.) which give the segment a uniform orientation and signal the content of discourse in it (Nwogu 1997 p.122). With regards to the connection between moves and sub-moves, Ngowu (1997) claims the latter are fundamental elements of the organised knowledge structure illustrated and outlined by the moves. According to Skelton (1994), moves are typically unconsciously acknowledged by the discourse community and move structure analysis facilitates its recognition.

Notwithstanding the acceptance of move structure analysis, Swales' theory has been evaluated both critically by researchers in this tradition. In an investigation of the Introduction section of RAs in the field of software engineering, Anthony (1999) used the 1990 CARS model (Swales 1990, 2004) encompassing three basic moves which were subdivided into steps, i.e. Move 1 "Establishing a territory", Move 2 "Establishing the niche", and Move 3 "Presenting the present study", leading to his argument that the model did not justify three specific structures, namely, definition of terms, exemplification of difficult concepts and evaluation of the research presented, as identified in the corpus. In reference to the disciplinary variation observed by Samraj (2002) in the fields of wildlife behaviour and conservation biology in her investigation of the Introduction section, she denied that reference to previous

work only surfaces in Move 1, noting the possibility of citations in Moves 2 and 3. Contrary to Swales' model again, she implies that literature reviews are "a freestanding sub-step that can be employed in the realisation of any step" (Samraj 2002, p.16).

Cotos et al (2017) developed Demonstrating Rigour and Credibility (DRaC) which is a comprehensive cross disciplinary model comprising three moves and sixteen steps in association with functional and content realisations for application in the methods section. Lim (2017) studied linguistic strategies to present experimental procedures based on the actual practice of expert writers. These include informed choices in applying various lexico-grammatical strategies such as recurrent parallel structures, agentless passive structures exhibiting varying degrees of obligation and specific adverbials in different sentential positions. Kwan and Chan (2014) developed a functional-semantic citation typology to reveal that Information System research journal articles display a higher citation density in the results and closing sections than that of the Information Management applied research journal articles in their corpus, with pedagogical implications. In concluding this brief review of possible rhetorical moves in RA sections, the findings by Basturkmen (2012) reveal two patterns of argumentation in commenting moves upon examining the discussion sections of articles in Dentistry. The results are applicable with a focus on genre based investigations regarding disciplinary variations and norms.

2.10 Scientific Discourse from an SFL Perspective

Halliday (2007) proposes features of scientific discourse, perceiving it as an evolution to address the requirements of scientific methodology, arguments and theory. He deems the language of science, i.e. Scientific English, is suited for experts, while seeming problematic and perplexing for novice learners who are required to master scientific concepts and principles in view of the nature of technical and scientific knowledge. Scientific discourse is subjected to its generic and grammatical structure as well as the micro-aspects pertaining to the grammar of a scientific clause where meaning is made (Halliday 2007, p.140). This bears a significant implication in underpinning the SFL theory and its application in scientific discourse within the context of my research. Halliday (2007) argues that scientific English is considered problematic even to native speakers, stating that:

"Scientific texts are found to be difficult to read; and this is said to be because they are written in scientific language, a jargon which

has the effect of making the learner feel excluded and alienated from the subject matter."

(p.159)

Among other opinions on the language of science, it has been reasoned by some as an unnecessary as well as a rather formalised writing style (Halliday 2007, p.160). This outlook implies that scientific theories and rationalisations can be subjected to expression in a lay manner, employing non-technical terminologies. Conversely, this view was rejected by Halliday and Matthiessen (2004), in their certainty that science relies entirely on scientific language. They argue that science is inseparable from the way it is written, hence scientific discourse cannot be communicated differently. They explain that the challenge to comprehend its language is reflected in the complexity of characteristics in the sciences rather than complications modelled by word choice (p.159). With regards to identification of the distinctive features possessed by scientific English and their functions in the discourse, Halliday and Matthiessen (2004) perceive complexity in the grammar compared with vocabulary, in addition to the role of technical terminologies.

Halliday (2007) claims that technical nominalisation involving grammatical metaphor (GM) is a common feature of scientific headings, while it is construed gradually in texts. He outlines the initial steps towards nominalised discourse as the creation of technical nouns and nominal groups with an iterated phrase or a group qualifier in a mathematical sense. He asserts the lexicogrammatical motifs of scientific English texts, noting that the relational clause type is generally favoured, specifically relational attributive clauses to assign properties and relational identifying clauses in providing definitions, as opposed to material and mental clauses which describe doing, observing and thinking. Halliday suggests that the positioning of the rhetorical function in an unfolding argument is realised by the Theme and Rheme structure as well as the Given and New structure. He conceptualises the rhetorical effects in the light of periodicity with regards to the occurrences of “backgrounding” whereby the Thematic element is also in the Given, and “foregrounding” noting the Rhematic element as the New.

Structures of scientific English can be evaluated in terms of nominal elements and verbal elements (Halliday 2007). Nominal elements are essential to the formation of technical taxonomies, taking into account categories of technological, theoretical and methodological concepts. These elements function as a means to summarise and package the representation of processes as realised by the rhetorical effects of “backgrounding” and “foregrounding”. Verbal elements instead relate nominalised processes and present them as is, in the following manner:

internally as an interpretation of “*b* proves *y*” and externally to each other in explaining “*a* causes *x*”. Textual organisation of the scientific clause is based on specific criteria in relevance to the description of experiments which comprise intricate clause complexes, observing minimal grammatical metaphor (GM) as opposed to abstract nouns as technical terminologies. On the contrary, arguments and conclusions are made up of less intricate clause complexes involving nominalisations with GM as well as abstract nouns as non-technical terminologies representing processes and attributes. Mathematical formulations however consist of clause simplexes i.e. simple sentences with a single clause, emphasising abstract nouns as mathematical expressions.

Noting that complications are due to the intricate relationship between technical terms, the following specific features are recommended for illustrating the characteristics of scientific English (Halliday and Matthiessen 2004, p.162):

- (1) interlocking definitions
- (2) technical taxonomies
- (3) special expressions
- (4) lexical density
- (5) syntactic ambiguity
- (6) grammatical metaphor (GM)
- (7) semantic discontinuity

In an effort to construe each of the above individually, Halliday (2007) describes interlocking definitions as terms that are interlocked towards the construction of a technical meaning in the process of defining each other. This poses a difficulty in comprehension when more definitions are involved. He categorises technical taxonomies into “kinds”, denoting “either / or” as well as “parts”, indicating “both / and”. For example, climate can be categorised as tropical or otherwise to represent various “kinds” while precise values of temperature and pressure etc. represent “parts” that exemplify the term. Special expressions as coined by Halliday involve stretching the grammar technically and mathematically in making references to tables, figures and graphs in the form of captions as well as descriptions. Lexical density is perceived by its count in the range of: spoken discourse < written discourse < scientific discourse; indicating an increase in difficulty to be read in view of simple words in spoken discourse as opposed to complicated expressions in scientific discourse. Syntactic ambiguity is caused by conversion of clauses into nouns, as well as the loss of semantic information when clausal expressions are replaced by nominal ones.

Both lexical density and syntactic ambiguity are by products of GM (Halliday and Matthiessen 2004). GM is regarded as the most substantial feature of scientific discourse, and is among the focus areas in the survey on scientific writing to account for participant awareness. Scientific English is highly metaphorical in the sense of GM, representing a “grammatics” or model of grammar as quoted by Halliday (2007) to intervene the learning process. It is construed by the substitution of a particular grammatical class or structure by another. Conversely, the unpacking of GM represents a less metaphorical form to a more congruent form. Halliday (2007) reiterates that “GM evolved first of all in the context of scientific discourse” (p.58). As a final point, semantic discontinuity is realised by leaps in writing to reach a required conclusion, whereby to discover new information, a reader will need to decode the text and reflect on it for further understanding.

Halliday (2007) theorises the features described above on the principle of natural selection and emphasises that they are closely related to each other with the exception of special expressions. He defines mastering of scientific writing, concepts and principles based on a functional model of grammar sustained by grammatical analysis. The grammatical shift from clausal to a nominal construal is perceived in the process of metaphorisation. A lexical metaphor is construed as a lexeme or word replaced by another, while a GM involves the replacement of a grammatical class or structure towards a new confluence of meaning, symbolised by the shift in functional status.

2.11 Linguistic Analyses of the RA Genre

The genre of RAs has been subjected to a broad range of linguistic analyses. Diachronic investigation based on the development and evolution of RAs from a linguistic perspective has yielded characterisation and categorisation of genre specific features of scientific discourses involved in the publication of a RA. This includes research on genres in the RA publication discourse event, characterised by RRs and ARRs. In an attempt to holistically introduce the history of scientific RAs in English, Bazerman (1984b, 1988) surveyed the publications in the *Philosophical Transactions of the Royal Society*, identified as the first scientific journal in English. Pioneering the exploration of scientific RAs in English, his research generated an exceptional overview of RA development, reflected in a comprehensive bibliography. Additionally, Bazerman (1984a) has probed the textual development of RAs in the *Physical Review* within the last century, to reveal transformation of specific features. He perceived variations in article length, references, syntactic and lexical features as well as organisation of the RAs, concluding that “this period marks the rise of American physics from backwardness

to world dominance, reflected by the journal's rise from a local university organ to the primary international journal of physics" (Bazerman 1984a, p.166).

Further diachronic analysis on RAs with respect to the study by Atkinson (1992) focussed on medical research published in the first medical journal in English, the *Edinburgh Medical Journal*. He relates progresses in medical writing in view of linguistic and rhetorical variations of medical research reporting. Likewise, the diachronic advancement of citation patterns in medical RAs published in English was investigated by Salager-Meyer (1999). The study was based on a corpus of 162 medical RAs published in 34 different British and American medical journals in the period between 1810 and 1995. The results indicated a transformation in referencing practises from an era of unprofessional, private and individually based medicinal research, towards that of a specialised, technologically oriented medical research within a structured scientific discourse community. Her earlier work discussed the frequency of hedges used in the generic staging within medical RAs and its influence on the communicative purposes of these rhetorical sections. The outcomes suggest that generic staging and communicative purpose of the discourse enacts hedging selection (Salager-Meyer 1994).

Besides the abovementioned studies on RAs in the medical sciences, Halliday (1993) focussed on the chronological development of physical science RAs as well as their lexicogrammatical uniqueness. Linguistic analysis of social sciences and geography RAs was emphasised in Wignell's (1987, 1997) research, noting discipline specific features within the linguistic realisation of scientific discourse. Combined with the attention to historical development of RAs, Banks' (1991, 1994, 2005a, b, 2006, 2008) exploratory studies encompassed specific linguistic features such as nominalisation, passive voice, personal pronouns and lexical hedging. Moessner (2009), provides the most recent discussion on corpus based diachronic linguistic research, comprising texts from the *Philosophical Transactions* of the Royal Society dating back to the seventeenth century. Investigation of the lexicogrammatical aspects of RAs, noting the distribution of lexical items within RAs of various disciplines, has been undertaken by Inman (1978) and Love (1993). The association between evaluative expression of RAs and the ideology of science in general was explained by Hunston (1993). Further studies have expansively reported the structure of collocations as lexicogrammatical patterns as well as their discourse functions in RAs (Gledhill 2000 a, b) and the collocational frameworks in medical RAs (Marco 2000).

In the light of register analysis, Biber and his colleagues have undertaken multidimensional analyses, reporting a comparison of linguistic development between functionally different registers, namely essays, fiction and personal letters (Biber and Finegan 1989). Their

subsequent work offered a relative diachronic analysis of written and speech based genres, comprising scientific writing (Biber and Finegan 1992). Moreover, Biber et al. (1998) present a comparative analysis of grammatical features involving multidisciplinary RAs, characterising ecology articles based on numerous impersonal features, including agentless passives and conjuncts while classifying history articles based on regular narrative features comprising past tense verbs and present participle clauses among others. The implication with regards to RAs depicting informational focus and an impersonal style as opposed to textbooks was acknowledged by Conrad (1996), based on his study of numerous lexico-grammatical features in biology academic texts.

The extensive recurrence of hedges rather than modals in expressing uncertainty in the context of RAs has been emphasised by Hyland and verified further with regards to inclination of interpersonal discourse, generally realised in claims by means of hedges, personal and frame markers (Hyland 1998, 1999). Following this, he studied the use of directives which were frequently noted in RAs of hard sciences to guide readers through the text and comparatively infrequent in social sciences RAs (Hyland 2002c). More recently, Hyland (2008) has reported his findings from a corpus of RAs, doctoral dissertations, and master's theses, focussing on forms, structures and functions of word clusters. He has expressed that the "study of clusters is an appropriate indicator to gain insights into the ways writers employ the resources of English in different contexts, and with the potential to inform advanced academic literacy instruction" (p.60).

Genre analysis, introduced by Swales is an additional focus of the linguistic research on RAs, concerned with the rhetorical organisation and thematic structure. The introductions of RAs were examined comprehensively prior to the establishment of rhetorical moves in its argument structure Swales (1981). The moves were formulated towards pedagogical implications for both native and foreign language communication. Swales' research and assertions on the existence of a fundamental rhetorical system along with a conventional structure in RAs as quoted in his books (Swales 1990, 2004), represents among the most thorough rhetorical analysis of RAs. Apart from the obligatory moves, he introduced steps, which are an optional part of the argumentation structure. Collectively, the RA textual macrostructure model presented by Swales has been acknowledged and adopted within the linguistic fraternity. Similar work was carried out by Ngowu on RAs of reputable medical journals, comprising function and structure, theme and rheme patterns, paragraph development as well as rhetorical moves (Nwogu 1991, 1993, 1997). The textual organisation on RA

introductions in applied linguistics was analysed recently by Ozturk (2007), who discovered sub-disciplinary variations in the move structures.

2.12 Grammatical Metaphor (GM) in Scientific Writing

Various SFL linguists have interpreted and epitomised the notion of grammatical metaphor (GM), coined as a linguistic phenomenon signifying a critical feature of grammar through which the discourse of science has evolved (Eggins 2004, Halliday 1998, Halliday & Martin 1993, Halliday & Mattiessen 2004, Martin & Rose 2007). Halliday (2007) defines GM as a special grammar for the language of science, which restates information in the form of a summary, compressed and packaged by grammar. He elucidates that the reshaping of experience is attained by means of “three successive waves of theoretical energy”: generalisation, i.e. conversion of proper nouns to common nouns; abstractness, i.e. transfiguration of concrete categories to abstract ones; and metaphor, i.e. metaphorical transformation of congruent construals, in the light of re-theorising an enlarged meaning potential as well as a new dimension. From Halliday’s viewpoint, grammar construes experience and these constituents exemplify the resultant understanding. He clarifies that to construe is to construct semiotically in order to transform experience into meaning. Martin and Rose’ (2007) opinion on GM consists of meaning transfer between congruent (spoken discourse) and incongruent or metaphorical (scientific discourse) elements.

Both language and knowledge contribute to unpacking text and grammatical analysis from its metaphoric to congruent form. GM categorises verbs as nouns or adjectives and logical relations or processes as verbs in depicting nominalisation, allowing grammatical classes to replace each other. GM thus represents a meaning creating operation at the level of lexicogrammar in the stratification of language. Halliday (2007) explains this further in the creation of technical terminology denoting a semantic junction, being a combination of two processes i.e. instantial to systemic and congruent to metaphorical, whereby a quality is construed as a thing. Consequently, the nature of technical elements in scientific discourse represents a “dead metaphor” that can no longer be unpacked (p.38). The unpacking of metaphors relies on a terminal point where the metaphorical shift takes place. This determines how far any instance of text can be unpacked with regards to the classification of GM and a varying degree of congruence in analysis. Halliday (2007) also rejects a misleading impression concerning the loss of meaning potential in the nominal, metaphoric mode of discourse.

Although nominalisation is predominant in the perspective of GM, it remains instantial and purely discursive in some circumstances whereby it can readily be unpacked. The formation of

GM by means of rationalisation symbolises that grammar has the power of construing and this involves stratification while it can also be deconstructed and reconstructed along different lines. In view of mapping meanings into forms, i.e. process into verbal and participant into nominal as implicated by stratification, remapping of the process into a nominal form is also possible (Halliday 2007, p.39). Halliday groups congruence in rank and status comprising semantic and grammatical categories, both of which undergo shifts in the formation of GM. He illustrates principles of typology and general drift identified upon analysing GM in technical discourse as shown below. Figure 2.5 denotes the drift towards the concrete, whereby a relator can be construed as a circumstance, process, quality, an entity and likewise for each of these semantic elements. The general drift also applies to grammatical ranks of a clause nexus, construed as a clause and subsequently a nominal group; however, both chains are irreversible.

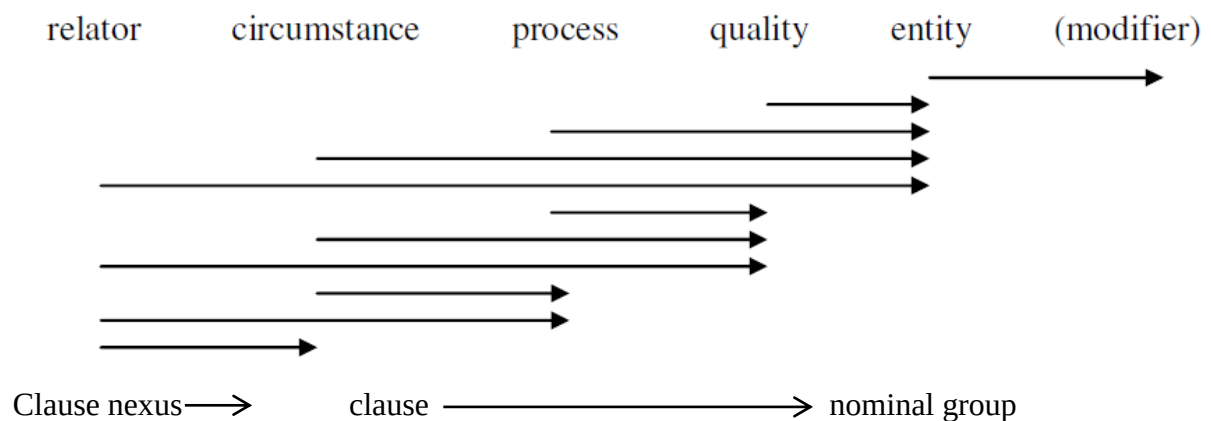


Figure 2.5: The ‘general drift’ of grammatical metaphor: status and rank (Adapted from Halliday 2007)

	semantic type			class shift	example
	congruent	metaphorical			
1	quality	event of process	entity	adjective – noun	<i>usable – usability</i>
2i	Process	event of process	entity	verb – noun	<i>transform – transformation</i>
2ii		aspect of phase of		tense/phase verb (adverb) – noun	<i>going to/by – prospect/attempt</i>
2iii		process		modality verb (adverb) – noun	
		modality of process			<i>can, could – possibility; potential</i>
3	circumstance	[minor process]	entity	preposition – noun	<i>with – accompaniment</i>
4	relator		entity	conjunction – noun	<i>so – cause, proof; if – condition</i>
5i	process	event of process	quality	verb – adjective	<i>[poverty] is increasing – increasing poverty</i>
5ii		aspect of phase of process		tense/phase verb (adverb) – adjective	<i>begin – initial</i>
5iii		modality of process		modality of verb (adverb) – adjective	<i>[always] will – constant</i>
6i	circumstance	manner	quality	adverb – adjective	<i>[acted brilliantly] – brilliant [acting]</i>
6ii		time, place, etc	quality	prepositional phrase – adjective	<i>[argued for a long time] – lengthy</i>
6iii			class	prep. phrase – noun pre-modifier	<i>[argument] cracks on the surface – surface [cracks]</i>
7	relator		quality	conjunction – adjective	<i>before – previous</i>
8	circumstance		process	Be/go + preposition – verb	<i>be about – concern; be instead of – replace</i>
9	relator		process	conjunction – verb	<i>and – complement; then – follow; so – lead</i>
10	relator		circums	conjunction – prepositional (phrase)	<i>When – in times of; so – as a result</i>
11	0		entity	0 – noun	<i>[x] – the fact of [x]</i>
12	0		process	0 – verb	<i>[x] – [x] occurs</i>
13	entity		modifie	noun – various	<i>engine [fails] – engine [failure];</i>
			r (of		<i>glass fracture – [the fracture] of glass;</i>
			entity)		<i>cabinet [decided] – government's decision</i>

Figure 2.6: Typology of grammatical metaphors (from Halliday 1998, p. 209-210)

Scientific texts are a form of academic writing and a resource of establishing solid argument structures through a writers' expression of experience in the form of processes. On an ontogenetic note, GM represents the development of experiential meanings, transforming common sense to uncommon sense (Halliday 2007). The remapping of semantics onto lexicogrammar indicates realignment between the pair of strata, in the formation of GM. Accordingly, based on SFL metafunctions there are ideational resources consisting of logical and experiential metaphors, as well as interpersonal and textual metaphors.

The experiential metafunction also known as transitivity, classifies a number of process types available to a writer in relation to participants and process interaction: material processes represent doing; relational processes communicate identifying and attributing; mental processes are connected to thinking and feeling; verbal processes denote saying. Behavioural and existential process types are employed in a genre to realise specific purposes. Formation of experiential GM has been construed in the manner of “*processes and qualities as things, processes and qualities as qualities of things, and things and people as parts of activities-as-things*” (Martin and Rose 2007, p.112). The first option represents instances of metaphoric nominalisation, while the latter options represent a distillation of terminologies towards a semantic junction as observed in scientific discourse. The latter are acknowledged by Halliday

as language technicality, which compacts and changes the nature of everyday words (Halliday 2007). The different applications of GM that have been developed provide approaches for writers to describe, classify and evaluate social processes comprehensively. Martin and Rose (2007) view the unpacking of ideational metaphors as a fundamental aspect of teaching GM and its application to language learners.

Halliday (2007) reveals the power of nominalisation as the dominant form of experiential GM in scientific discourse by considering two essential semiotic conditions, namely technicality and rationality, which are obligatory aspects of a scientific theory. He validates technicality with reference to creating technical taxonomies and categorising its organisation based on ideational resources, noting its existence as solely on the semiotic level (Halliday 2007 p.123). He asserts the influence of nominalisation in facilitating the integral complexity of scientific discourse. The strengths of nominalisation in scientific English is evident in metaphorical inferences and the experiential transfer of grammatical elements as identified by Halliday in the course of analysing instances (Figure 2.6). He acknowledges that these types of GM are significant in relation to scientific texts.

Halliday infers that “there is a payoff, both grammatically and semantically, for construing phenomena as nouns” (Halliday 2007, p.124), noting the nominal groups’ control over both grammatical structure potential and semantic nature of entities. He verifies the creation of a technical concept by means of GM, with the example of “*glass crack growth rate*” which implicates the impact of progressive nominalisation of processes and qualities in the following manner: from *glass can crack* (verb) to a *glass crack* (noun); from *glass cracks can grow* to *glass crack growth*; from *glass crack growth is faster or slower* to *glass crack growth rate*. This new nominal group represents a rewording and a re-meaning, considerably (Halliday 2007, p.126).

The second semiotic condition deliberated by Halliday is that of rationality in science which is apparent in general conclusions as well as the construction of an argument resulting from a long sequence of related stages, in a chronological order as a basis for subsequent reasoning. With respect to scientific writing, he reflects discourse in motion and ascertains that the Theme in a chain of reasoning is generally gathered upon an outline of the previous argument (Halliday, 2007, p.125). Nominalisation is the only means to facilitate packaging an argument as the theme of a clause. Rationality in scientific discourse is construed through a clause and its thematic movements which incorporate nominalisation in connected steps towards an instantial entity.

Stabilisation of a virtual entity thus construes technicality and is concept dependent, noting progressive nominalisation of processes and qualities towards the development of a scientific theory. Conversely, logical metaphors, categorised within the ideational metafunction are associated with conjunctions, specifying process related inferences. Logical metaphors take into account adding, comparing, sequencing, or explaining them in an effort to relate activities and messages in sequences (Martin and Rose 2007, p.115). The formation of logical metaphors always involves experiential metaphor as well as the reconstrual of conjunctions as processes, things, qualities and circumstances (Martin and Rose 2007, p.148). Martin and Rose (2007) have demonstrated various means of reconstruing conjunctions as process and as things or qualities. Conjunctions are metaphorised as processes commonly in abstract or technical writing, when a consequential conjunction functions as a process. On the other hand, a circumstantial relational clause with a causal verb (*led to*, *resulted in* etc.) relates two nominalisations, and these processes are essentially the metaphorical versions of the conjunction so (Martin 1992).

The process of metaphorising is a language resource, relevant to writers in different circumstances. Martin and Rose (2007) define lexical metaphor with regards to the lexical transference of meaning, when a particular lexis substitutes another. They quote the following example “he and his colleagues acted like vultures, meaning that they treated people like prey or carrion” (Martin and Rose 2007, p.110). Grammatical metaphors can be analysed in line with lexical density, by observing and classifying “grammatical” words versus “lexical” words in a particular text. The proportion of grammatical to lexical terms indicates the lexical density of a text. Nominal groups are lexically dense if they contain multiple elements. Lexical density can indicate the level of formality in a specific text, demonstrating the writer’s ability to regulate it in line with the texts’ requirements. Hence, optimal utilisation of lexical and grammatical metaphors is a noteworthy resource to refine the creation and analysis of written texts.

As described previously, GM in some cases serves to modify a process circumstantially while reflecting the power of nominalisation in experiential metaphors and its significance in scientific writing. Relational clauses are regularly observed in scientific writing as a means of informing the reader, thus its representation as an experiential metaphor is likely. In the light of language condensation perceived in the experiential metaphor, lexical words are higher in ratio to grammatical words. Halliday (2004) proposed a method to calculate the lexical density of a text by “dividing the number of lexical items by the number of ranking clauses” (p. 665).

Halliday (2007) specified five headings for the organisation of technical knowledge as follows:

- 1) Expanding nouns
- 2) Trans-categorising processes and qualities into nouns, relators to verbs etc.
- 3) Logical reasoning by means of compacting arguments in information flow
- 4) Distilling outcomes e.g. abstract virtual entities
- 5) Theorising science (comprising the above)

He describes constructing a scientific theory as a lexicogrammatical exercise which involves reconstruing experience in the form of grammatical rewording and semantic remeaning, leading to the construction of knowledge and ideology which can be represented in the form of GM. The grammatical construction of scientific knowledge involves framing of the English clause, whereby GM variants realise category meanings rather than word meanings. Hence, GM reconstrues relations between grammar and semantics in a shift towards the concrete. It symbolises a special grammar for science through which scientific knowledge is construed, by employing the declarative grammatical mood on cruise control. Scientific metaphors can be unpacked unless a technical meaning is formed. A technical terminology characterises the congruent construal of a new entity via distillation, recognised as the creation of a dead metaphor. Altogether, GM contributes to the rationality of scientific discourse as well as the technicality of the field.

2.13 Previous Research on GM in Scientific Discourse

Halliday (2007) affirms that the nominalising grammar of science imposes determinacy, constancy and construes a world that is ultimately made of things. His perspectives on the structure of scientific English has appealed to numerous scholars and curriculum planners who have undertaken further research and published their findings on the grounds of this focus area. Sanéz (2000) reassessed the SFL notion of GM from the perspective of cognitive linguistics to indicate weaknesses as well as to improve the effectiveness of this resource as a tool for text analysis. He associates the function of ideational GM in accounting for unexplained meanings in the light of generic conceptualisation patterns (p.509). Seyed and Ferdos (2003) characterised the realisation of GM in the RA introduction and conclusion in a particular field, across research fields and between social and natural sciences, hypothesising the significance and greater instances of interpersonal GM in social science RAs. Susinskiense's (2004) study on the other hand, was aimed at establishing functional peculiarities of GMs occurring in simple sentences focussing on nominalisations based on material processes and these

nominalised propositions practically expressed the same semantic and syntactic functions as their non-process counterparts, noting a difference only with frequency of occurrence.

Banks (2005a) analysed a short extract from Newton's *Philosophiae Naturalis Principia Mathematica*, published in 1687, in comparison with its contemporary English translation by Motte, published in 1729, and his study revealed that nominalisations in Motte's translation are paralleled by nominalisations in the Latin original, drawing a conclusion on the possibility of Latin influence on the early development of scientific English. Philippa (2009) observed linguistic metaphors in a corpus of medical RA discussion sections, specifically noting the concept of blending words and phrases in the formation of metaphors, in an attempt to explain this occurrence. Wang (2010) examines and discusses the difficulties faced by Chinese scholars writing in English and their application of GM which include pedagogical implications such as developing students' awareness of English writing skills by means of teaching nominalisation as well as the role of translation in relation to teaching GM with a focus on the conceptual relationship between nominalisation and GM.

Holtz (2011) presents a comparative quantitative analysis based on instances of nominalisation in a corpus of interdisciplinary RAs and their abstracts. Her findings indicate that nominalisation occurs extensively in abstracts compared to their RAs. A more nominalised style is apparent in biology and mechanical engineering disciplines compared to computer science and linguistics, while an individual comparison reveals that use of nominalisation in abstracts and their RAs are more similar in mechanical engineering, followed by an increasing order of dissimilarities in biology, computer science and linguistics, respectively. Kazemian's (2013) analysis on ideational GM draws implications on writing and reading of academic and scientific texts from the perspectives of translators, students and instructors involved in writing and reading pedagogy. The findings indicate permeation of Ideational Grammatical Metaphor in scientific texts and material and relational categories are the prevailing process types, rendering a more abstract, technical and formal tone of the writing while enabling technicality and rationality. The paper by Li (2015) reports that interpersonal and textual grammatical metaphors are also a property of the English nominal group, which can also be explored from other perspectives.

2.14 RA Publication from a Malaysian Perspective

Kinds of writing in a research based organisation vary from that of basic writers with remedial encounters to research writing by teams of experienced and established scientists. The following examine RA writing in general: Bardi (2015); Duenos (2012), which also explores

feedback as a negotiation); Ho (2017, which also focuses on pre-publication negotiation); Huang (2017); Li (2014); and Uzener (2008, which also includes a focus on peer review). As early as Shaughnessy (1977), writers have pointed out the potentially alienating context of scientific discourse, while more recently Barton (2004) elaborates that inexperienced or novice writers do not have an “ear” for what sounds good, hence they are less able to paraphrase and have more difficulty reading background texts, contributing to poor lexical choices in a scientific RA.

Further refining these views to a national perspective, there has been a small degree of investigation on novice Malaysian scientists’ participation in the publication discourse event and a rather insignificant focus on the meta-genres of scientific RAs. Locally trained researchers also often lack scientific English writing skills and face much rejection based on writing problems. Previous work on genre analysis in Malaysia is limited in relevance to scientific RAs and the publication discourse event, due to cultural differences coupled with the lack of focus on rhetorical literacy of novice writers. Preceding genre studies in Malaysia are associated with the fields of literature, Malay language discourse, applied linguistics focusing on discourse analysis and pragmatics, mass communication, philosophy, policy and strategy (Suryani 2013, Alatas 2001). In this context, though, there has been little exploration into linguistic realisations and analysis associated with the RA publication discourse event, although Loi et al (2016) use Martin and White’s (2005) Appraisal framework to compare evaluative stance in English versus Malay RA conclusions.

The influence of English and its significance towards achieving publication in international journals is noteworthy considering the susceptibility and potential of novice scientists in Malaysia as a whole and within the MRB in particular. Perceived technical hitches confronted by scientists at MRB and potential authors submitting manuscripts for consideration of publication to JRR have instigated the need for this present study. Investigation of the substandard writing quality with regards to RAs submitted for publication in Malaysia is limited in literature, although it is a prerequisite towards the awareness for increased publications (Lim 1992, Zainab 1997, Zakaria and Rowland 2006, Jusoff and Samah 2010, Suryani 2013). Identification of predicaments involving the English language barrier and the limited allocation of time towards writing as well as cultural issues have been considered in the assessment of rhetorical move structures in RAs (Altbach 1978, Lim 1992, Ahmad 1997, Zainab 1997, Zakaria and Rowland 2006, Suryani 2013).

This study proposes to increase the effectiveness of novice writers in empowering their variations with regards to composition of rubber RAs and access to success in achieving

publication at an international level. Results of a macro genre analysis coupled with a semantic analysis on RRs and ARRs, based on that of accepted and rejected manuscripts as well as those requiring resubmission will serve a foundational role in exploring reasons behind unpublishable texts by novice writers. From a linguistic perspective, these analyses will lead to findings on scientific writing and rubber RA publication in a Malaysian context, with significant emphasis on the success of novice writers achieving publication. Conclusions of this research will indicate the boundaries within which specific editorial decisions take place as a result of the characteristic linguistic features ensuring success and risk of failure in the extended RA genre and participation of novice writers in the publication discourse event.

2.15 Summary

A review of the literature comprising previous works on the evolution of RAs and the publication process brings the present study into perspective. A review of SFL as the fundamental theoretical framework for this study situates the present research in context. The concept of discourse communities and genres related to RA publication successively contribute to the focus of a macro genre perspective of the overarching discourse event. This leads to a review of research on genre analysis among scholars in the field. The discussion on scientific discourse from an SFL perspective and linguistic analysis of the RA genre confirms the present research gap. Previous work regarding an important grammatical tool in scientific writing, i.e. GM is discussed in view of poor awareness levels among survey participants. The following chapter will describe the dataset and methodology for each phase of analysis prior to the discussion of results.

CHAPTER 3

Methodology

3.1 Context of Research Methodology

This research design supports awareness and understanding of the overarching rubber research article (RA) publication discourse event as a macro genre, as its primary objective. In doing this, the analyses identified specific linguistic features that risk the social purpose and goal of achieving success with publication. In particular, it focused on those issues that pose risks while authors navigate throughout the stages of submission, up to an editorial decision on manuscripts submitted to a peer reviewed journal. The methodology for this research is a framework of genre analysis primarily, underpinned by systemic functional linguistics (SFL) theories, which are context dependent. The study serves to analyse the publication process of rubber RAs and related genres including RRs and ARRs. The analysis was primarily qualitative in nature, and therefore its findings were fundamentally interpretive. Creswell (2003, p.182, cited in Madkur 2013), states that a descriptive qualitative approach will include developing a description of a situational setting, prior to analysing the data for categorical variations, succeeded by interpretation of the data and drawing theoretical conclusions and recommendations for future research.

I approached this research and its objectives from my perspectives and experience as scientific, technical and managing editor for the Journal of Rubber Research (JRR), as well as secretary of the JRR Editorial Committee since 2005, together with access to a novel data set of rubber RAs, RRs, ARRs and related editorial correspondences. Throughout my tenure, there has been a severe lack of contribution from researchers within the organisation, predominantly comprising local scientists. The journal has constantly experienced an insufficient backlog of manuscripts for publication, as indicated by the preliminary analysis in Figure 1.1 (Chapter 1), revealing an average trend of only 16% of researchers in the organisation actively writing for publication over a period of 10 years. These motivations, coupled with the literature review presented previously, have led me to identify a research gap on scientific writing with regards to the process of rubber RA publication, in the context of Malaysian scientists. The theoretical framework of SFL underpins both research design and methodology, which represents a triangulation of qualitative analyses.

The research methodology involved four phases of analysis altogether, beginning with longitudinal case studies on rubber RA publication pathways in the first phase. The development of rubber RAs across different pathways towards publication motivated selection of these cases, i.e. a circuitous route contrasted against an unproblematic one, both of which achieved the social purpose and goal of publication, subsequently compared with a manuscript that ultimately faced rejection. The analysis of these cases considered the perspectives of discourse event participants, namely the author, the journal editor and the reviewers. In the context of SFL, the notion of logogenesis by Halliday and Matthiessen (2004) bears significance to the RA, as the central text in the cases studied:

*“It is helpful to have a term for this general phenomenon — that is, the creation of meaning in the course of the unfolding of text. We shall call it **logogenesis**, with ‘logos’ in its original sense of ‘discourse’. Logogenesis pertains to the entire meaning potential — all the strata and all the metafunctions.”* (p.530)

Logogenesis in the above context represents the evolution of texts, while the RA is best seen as a central text of the ongoing discourse. Changes to the RA from the point of submission towards revision and final acceptance is a process Charlotte and Irwin (forthcoming) term “bibliogenesis”. It is the successful bibliogenetic alteration of the RA over time which allow its survival as a published artefact or its removal from the mimetic pool.

The second phase of this research was a macro generic analysis consisting of a rich description of the pathways involving required and optional stages. The dataset comprised 44 rubber RAs, relevant editorial correspondences and texts from the overarching discourse event from cradle (initial inquiry) to grave (publication or lack of it), as it were. Following this the third phase of analysis comprised an exhaustive discussion of results from the semantic coding(s) of the editors and RRs, along with authors’ replies to their feedbacks. The qualitative semantic analysis of major discourses involved in the peer review process revealed emergent trends and metalinguistic characteristics of rubber RAs in the corpus.

The fourth and final phase involved a survey of viewpoints from scientists in research and academia throughout Malaysia on the general phenomenon of scientific writing, and more specifically regarding RA publication. The survey was produced in the form of an online questionnaire in order to facilitate a wider range of distribution and participation. The feedback and responses gathered provide contextual information on awareness among scientists of varying experience and backgrounds with regards to scientific writing and RA publication

related issues. In that regard, a discussion on results of the survey is followed by a triangulation to conclude research findings, based on data analysis described in preceding phases. Triangulation of the research design and findings will serve to emphasise novelty and conclude knowledge contribution of this study.

3.2 Data Collection

My dataset consisted of original records which were textual, including scientists' discourses in the form of original manuscript submissions, RRs, ARRs, revised and ultimately published/unpublished rubber RAs as well as survey feedback with regards to publication of RAs. The corpus of scientists' discourses represent language data, as it involved language samples elicited from the research participants. The data is reflective of the social phenomena comprising scientists' discourse throughout the rubber RA publication process as it occurred naturally. The research data source included previous records from the journal's online portal, Editorial Manager®. In maintaining a natural context without any attempts to manipulate the situation and data under study, there existed both prolonged contact with participants and immersion on my part, as the sole scientific and technical managing Editor for the journal in the overall research setting.

This research design encompassed the perspective of insider meaning (Dörnyei 2007), since an aspect of qualitative research is concerned with subjective opinions as well as experiences and feelings of participants. This study aimed to explore both reviewers' and authors' views of the discourse event, i.e. analysis of original RRs and ARRs, in an effort to achieve its explicit goals. This was done by also drawing from the approach how qualitative researchers perceive meaning, with regards to Punch's (2005) suggestion of the fundamental qualitative principle that human behaviour is based upon meanings which people attribute to and bring to situations. Further, in this context, the actual participants revealed meanings and interpretations of their experiences and actions. Original participant discourses is thus a direct implication in viewing the social phenomena with reference to the term "insider perspective" (Dörnyei 2007, p.38).

I applied for an official ethics approval, granted by the university's Research Ethics Committee as well as the Malaysian Rubber Board, with reference to the proposed research design. I received approval for the participant information and consent sheets comprising details of the research objectives and implications. As a means to facilitate seeking permission of authors and reviewers as well as approaching potential survey participants, describing the

nature of this project while confirming participant anonymity was necessary. All participants of the research provided their consent for their direct (survey questionnaire) and indirect (case studies/macro genre analysis/semantic coding) involvement in the context of this research. In line with preserving ethical consideration for the purposes of this research, individual records of participant consents were compiled accordingly for both the survey and manuscript related correspondences.

In view of qualitative research involving outcomes of interpretive analysis, Miles and Huberman (1994) summarise the element of a researcher's subjectivity as "the researcher is essentially the main 'measurement device' in the study" (p.7). Factors such as the researcher's own values, personal history and position in a social context are equally important (Haverkamp 2005). The exploratory nature of qualitative research was significant to the context of this research, as scientific writing and RA publication process among researchers and academia in Malaysia is a relatively unexplored domain. This data driven approach advances depth to the analysis and indirectly broadens the possible interpretations of participants' experiences to widen the scope of understanding with respect to both scientific writing and rubber RA publication processes. For the longitudinal examination of scientist discourses along the pathway of a manuscript during the peer review process from submission towards an editorial decision, qualitative analysis served to explore sequential patterns and changes that occurred throughout.

3.3 Quality Criteria in Data Collection and Analysis

The quality criteria was an emphasis of this research throughout the stages of method selection, data collection, analysis and reporting of findings. The notions of validity and reliability with regards to this research are in accordance to standards described as follows, which correspond with justification of the research methodology selection and data analysis procedures. Previous researchers summarise the complexity of reliability in qualitative research in reference to the element of consistency in obtaining the same results if the study were replicated (Silverman 2005, p.224, Kirk and Miller 1986, p.69, Morse and Richards 2002, p.168). Considering the qualitative research paradigm, most inferences are in association with participants' accounts and subjective construal by the researcher (Dörnyei 2007, p.57). This research reflected on components of validity in qualitative research as described by Lincoln and Guba's (1985) taxonomy of quality criteria, as well as Maxwell's (1992) taxonomy of validity in qualitative research.

Lincoln and Guba (1985) demonstrate a model of trustworthiness in correlation with validity applicable to the framework of qualitative research. Four significant criteria in this regard are:

- i. Credibility, in reference to internal validity and truth value in the analysis of data
- ii. Transferability, in reference to external validity and applicability of the results in another perspective
- iii. Dependability, in reference to consistency and reliability of the findings above
- iv. Confirmability, in reference to the neutrality and objectivity of the findings

My dataset was in line with the above notions, consisting original scientists' discourses on manuscripts submitted for publication to JRR, i.e. RRs and ARRs. The validity of data for the semantic coding analysis revealed consistencies resulting from the first two phases of the case studies and macro genre analyses. This aspect contributed towards garnering the novelty of codes representing metalinguistic characteristics within the dataset. Interpretation of these codes and emergent trends were in line with the uniqueness of the dataset in representing perspectives on both scientific writing practices and publication culture in context.

The longitudinal case studies allowed for transferability to all publications as the analysis closely examines development of rubber RAs from the perspective of how they move through time, in view of specific instances existing in an unproblematic publication contrasted with a much more circuitous route to publication affected by a number of participants, the author, the journal editor and the reviewers. Results from this first phase of the analysis reflected the notion of a dialogue in writing and outlined boundaries within which specific editorial decisions take place as a result of the characteristic meta-linguistic features. It proposed grammatical tools in ensuring success in achieving the social purpose and goal of publication.

Application and incorporation of the well-grounded SFL theoretical framework in both the above phases of analyses assured dependability. A result of this application was the iterative process of coding RRs and ARRs, described in further detail together with the analysis of coding results in the following section. Confirmability of the methodology was apparent in an effort to explore solutions towards answering specific research questions, corresponding to

goals of the present study weighed against previous findings in the area. Confirmability in the framework of this research resulted from emerging conclusions of the analysis in each phase.

In a similar yet more exhaustive context, Maxwell (1992) proposes his taxonomy of validity in qualitative research. He further substantiates traditional concepts of validity and reliability, encompassing five components that are applicable in the context of my research and coherent with the methodology for data selection and analysis. The following description of each component and justification in accordance with the present study follows:

- i. Descriptive validity, in reference to ensuring validity on the part of the investigator and personal observations instead of secondary accounts, inferred from other data or sources.
- ii. Interpretive validity, in tandem with discussing the findings with participants and obtaining their feedback on the various tangible discourse events comprising the analysis.
- iii. Theoretical validity, in reference to the incorporation of justification and abstraction to describe the context of analysis and findings on the part of the researcher.
- iv. Generalisability, in reference to the context of “internal generalisability” within the community or institution observed.
- v. Evaluative validity, in reference to the worth and value of the research.

Descriptive validity was a criteria of the present research in regard to accuracy of the data (Thomson 2011) in the various phases of analysis. Data for the case studies in the first phase of the analysis are approached from the perspective of an editor and investigator who closely examined the development of three rubber RAs and related discourses. The editor’s involvement in each case varied as the rubber RAs move through time and specific instances in an unproblematic publication pathway contrasted with a much more circuitous route to publication and finally contrasted against a rubber RA that was rejected. The effect of a number of participants on the overarching discourse event, namely the author, the journal editor and the reviewers, revealed active engagement in a dialogue throughout the peer review process.

The second phase of the research was a macro genre analysis, in sketching out the macro and micro stages involved together with obligatory and optional elements in sequence. The analysis of data identified genre parameters with regards to a typical macro genre pattern and variations in the macro genre pattern towards achieving success with publication that included identification of potential threats leading to failure of the discourse event. In doing this, the

analysis also drew particular attention to the various points of contention that authors should potentially be aware of. Successful negotiation as a result of acquiring discourse knowledge and skills to engage in a dialogue with reviewers and editors will increase the likelihood of success in view of the social purpose of seeing a quality publication to print.

The third phase of this research involved semantic coding and analysis of RRs, specifically the nature of editor and reviewer comments which contain expert views and evaluation of manuscripts submitted to JRR. While these implied meta-linguistic considerations pertaining to strengths and weaknesses in scientific writing for rubber RA publication, the semantic coding analysis of ARRs further developed a specific feature of negotiation in scientific writing with regards to rubber RA publication.

Interpretive validity can be achieved through analysis of the online survey feedback as part of the fourth and final phase of analysis. This research comprehensively builds upon successive measures in engaging findings and conclusions of the first three phases in this study with perspectives from the extended discourse community. Therefore, an assessment of levels of awareness and understanding on scientific writing and RA publication (survey) versus that of application of this knowledge in the dataset (case studies, macro genre and semantic coding analyses) validated both participant perspectives (Thomson 2011) and future recommendations, accordingly. With regards to theoretical validity, the present study is strongly underpinned in SFL genre analysis (Martin 1992, 1999) and its study of scientific discourse features (Halliday and Matthiessen 2004). These theoretical frameworks are part of a well-developed linguistic theory which contributes to the research analyses and findings (Thompson 2011), which in turn support the patterns, concepts and categories representing the RA publication macro genre.

Standpoints on understanding and awareness on specific cultural practices within the discourse community among scientists in research and academia locally were a result of the survey on scientific writing and RA publication. Results and findings from the survey and the qualitative analyses on the nature of scientists' discourse in the first three phases of analysis allowed for triangulation. This triangulation of findings demonstrated interpretation of the research context by local researchers in science and academia, reviewers and authors associated with JRR as well as my interpretation as principal investigator and editor for JRR on studying exceptional cases within the corpus.

Data extracted for analysis on scientific writing with regards to rubber RA publication encompassing scientists' discourse, namely RRs and ARRs, were compiled based on all online

submissions to JRR within the period of June 2013 – June 2015 with no exemptions or biases, to reflect internal generalisability of the research design. “External generalisability” among the scientific community in Malaysia in research and academia is observable in the distribution of the online survey for feedback on scientific writing with regards to RA publication to a wider scope of participants, allowing for transferability of findings as well as conclusions (Thomson 2011). In an attempt to include the participants’ own judgements on the objectives of the issue of scientific writing with regards to RA publication, the research data accounted for both these aspects of the notion of generalisability.

The potential impact of the results on scientific writing and RA publication in Malaysia points towards evaluative validity (Thomson 2011). The phenomenon under analysis and theoretical framework chosen were appropriate in an effort to yield findings on the risks affecting success with RA publication and scientific writing. A fundamental reason that motivated the course of this study was an average trend of only under 16% of active involvement in scientific writing and achieving success in peer reviewed publications over the period of 10 years among scientists in a Malaysian research institution. This factor, weighs alarmingly against 84% of dormant effort in the same context. The literature review also reveals that both domains of scientific writing and RA publication in Malaysia are under researched. From a global perspective, there has been no previous research on the overarching rubber RA publication discourse event from a macro genre perspective. The notion of a macro genre, represents an original contribution in view of the exhaustive literature review on RA publication encompassing the field of SFL, genre analysis and English for Research Publication Purposes. A macro genre in the context of SFL, together with structural, technical and functional metalinguistic features of scientists’ discourse were defined by results of the analysis in each phase. This study will therefore have a significant impact on both the existing problem and research gap by means of qualitative genre analysis within the SFL theoretical framework.

The model of method and data triangulation in the context of qualitative analyses for this research attempts to reduce systematic bias (Dörnyei 2007). Convergence of findings and conclusions in the context of scientific writing and rubber RA publication in Malaysia by means of the three different methods of data collection and phases of analysis will ultimately reflect confirmation of strong research validity. Dörnyei (2007) recommends the notions of prolonged engagement and persistent observation as equally relevant, which is provided by my perspectives and motivations for this study resulting from professional contribution as the sole scientific, technical and managing editor for JRR since 2005 up to the present. My

experience in facilitating both the peer review process and interpreting scientists' discourses towards a finalised editorial decision in the context of scientific writing and the rubber RA publication process holds face validity for this research.

Duff (2006), concludes that the nature of a longitudinal research design in view of revelations on developments and interactions over a period of time leads to increased validity of findings and conclusions that can be drawn out from them. This was certainly a prominent aspect of the case studies and twofold qualitative analysis (macro genre and semantic coding) of RRs and ARRs for all 44 submissions in the corpus. Specifically the cases studied from the perspective of how they move through time, affected by participants involved in the process support the notion of increased validity. All four phases of this research are aimed at revealing the boundaries within which specific editorial decisions take place as a result of the characteristic linguistic features and grammatical tools ensuring success and risking failure in technical communication.

3.4 Phase 1: Multiple Case Studies

I approached this multiple case study from an over-arching perspective, taking into account all language-based data sources from the various phases of communication throughout the publication process. The first phase of this research closely examined the development of two rubber RAs from the perspective of how they move through time, affected by a number of participants: the researcher (author), the journal editor, and the reviewers. The first instance represented a circuitous route to publication, i.e. there was a significant amount of interaction between the participants, due to it being subjected to major revision and the second an unproblematic publication, i.e. one in which there was a minimum of corrective feedback and the article was subjected to only minor revision. These two were further contrasted against a case wherein communication and RRs led to the rejection of a particular manuscript. The case studies were longitudinal in nature, considering the extended span of time with regards to the extracted data for an individual case. The data gathering process involved original scientists' discourses extracted from the online portal Editorial Manager® for JRR. Original rubber RAs, related RRs and editorial decisions, ARRs, revised rubber RAs and published rubber RAs represented the specific cases in line with the overall study.

My insider experience and perspectives as an editor contributed to understanding novel data sources from various phases of communication throughout the publication process. Case study research is the only adequate research methodology for particularly problematic domains

involving a longitudinal process (van Lier 2005, p.195). These case studies outlined the cline of publication risks and rewards that arise by analysis of the overarching discourse event. Part of the problem for novice writers and my argument is inherent via the common linguistic view that an RA is a single, finished text, instead of the culmination of a largely dialogic process which itself comprises a macro genre (as per Martin 1992, understood as an interlocking set of genres which operate with an over-riding social purpose).

Insider meaning is also an aspect of this study, due to my unique experience; the subjective opinions as well as experiences and feelings of participants can therefore be reasonably hypothesised. Editor, reviewer and author views of the discourse situation are important to understanding the explicit social goals of the discourse event, and indeed to define those goals. This approach is based on how qualitative researchers perceive meaning, with regards to the fundamental qualitative principle that human behaviour is based upon meanings which people attribute to and bring to situations, as suggested by Punch (2005). Further, in this context some participants revealed meanings and interpretations of their experiences and actions; we therefore can view the social phenomena with an “insider perspective” (Dörnyei 2007, p.38). In view of qualitative research involving outcomes of interpretive analysis, the element of a researcher’s subjectivity is summarised by Miles and Huberman (1994, p.7): “The researcher is essentially the main ‘measurement device’ in the study”. Factors such as the researcher’s own values, personal history and position in a social context are equally important (Haverkamp 2005).

Given the longitudinal examination of writer and reader scientist discourses along the pathway of a manuscript from submission towards an editorial decision, qualitative analyses served to explore sequential patterns and changes that occurred throughout this process. This data driven approach advanced depth to the analysis and indirectly broadened the possible interpretations of participants’ experiences to widen the scope of understanding with respect to scientific writing and RA publication locally. Bearing in mind the longitudinal examination of scientist discourses along the pathway of a manuscript during the peer review process from submission towards an editorial decision, qualitative analyses served to explore sequential patterns and changes that occurred throughout.

The analysis comprised the macro stages of Initiation, Evaluation and Conclusion. I analysed RRs with respect to the recommendation and feedback from these field experts, focusing on specific strengths and weaknesses; the designated editorial decision on the RA and author replies to feedback are then examined. The macro stages of Evaluation and Conclusion may be reiterated in circuitous routes towards publication involving major revision, while

rubber RAs that undergo an uncomplicated path towards publication involved a single review stage, two rubber RAs are contrasted against a rubber RA that ultimately faced rejection.

The movements through the macro genre stages are enhanced with a line-by-line analysis of all bibliogenetic iterations of the central artefact of the rubber RA as it evolved towards publication or rejection. Those lexicogrammatical and rhetorical features which change due to the input of the initial readers – editors and reviewers – are compared in terms of scope and quality.

A preliminary analysis specific to JRR at the level of register, in the context of situation and culture, served to indicate the baseline of this study. This analysis was considered from the aspect of register variables (field, tenor and mode of discourse) within the context of situation. These registerial configurations expressed specific genres or text types representing the context of culture, within the genre cluster consisting macro stages of the rubber RA publication discourse event. Table 2.1 denotes classification of fundamental genres within the genre cluster of RA publication with a description of these genres along with their purposes and structural expectations as part of the literature review on SFL (Chapter 2, section 2.10).

In illustrating the notions of genre and register, Irwin and Joavanovic-Krstic (forthcoming) claim “the context of culture influences how we use our language to shape meanings”, while “the context of situation is time-specific”. They assert that the concepts of field, tenor and mode are completely pertinent to writers, recognising “extralinguistic features” of a specific text in line with its implication (p.191).

The multiple case studies sketched out the boundaries within which specific editorial decisions take place via thorough analysis of meta-linguistic issues in rubber RAs (as per Halliday and Matthiessen 2014) at various phases in the submission process. Additionally, qualitative semantic analysis on the nature of editor and reviewer comments including those in which the author provides replies to feedback, result in the characteristic metalinguistic features which ensure success and risk of failure in a technical communication context. This study will have a significant impact on both the existing problem and research gap by means of qualitative macro genre analysis within the SFL theoretical framework applied to the selected cases. The notions of genre, which have been mapped out in the analysis with regards to the macro and micro genres within the rubber RA publication discourse event, are clearly defined in the context of SFL together with structural, functional and technical metalinguistic features of scientists’ discourse to be analysed accordingly. In that regard, the phenomenon under analysis and theoretical framework applied are appropriate in an effort to yield findings on the risks and rewards with regards to rubber RA publication and scientific writing issues.

Chapter 4 discusses an outline of each case with details of particular trends emerging from the discourses involved. In each case, the entirety of each manuscript pathway will be described, and an analysis of rubber RAs as well as the genres of RRs and ARRs will be developed. Acknowledging that each case moved through the macro genre comprising macro stages of Initiation, Evaluation and Conclusion, I examined each case in terms of the individual texts (from the perspective of the over-arching discourse event, “micro genres”) which themselves represent stages taking place in the publication process.

The multiple case studies together with realisation of the rubber RA publication discourse event as a macro genre, semantic coding analysis of RRs and ARRs will draw attention to findings and conclusions on scientific writing for successful navigation along the rubber RA publication pathway, with significant emphasis on novice writers. Corroboration of data analysis and triangulation in the context of the survey feedback will postulate an overall interpretation on perspectives from participants’ levels of awareness and understanding in comparison with application of these aspects in the processes scientific writing and RA publication. The variations among case studies within the culture of scientific writing and rubber RA publication can yield a potentially thick description with rich and in-depth insights over other methodologies, in allowing the examination of an intricate set of circumstances on the basis of interaction in shaping the outcome of particular manuscripts. In an effort to display and attain a high degree of completeness, depth of analysis and readability, the multiple case studies accentuate the effective understanding of publication risks and rewards towards generation of a pedagogical model (typology) for novice second language researchers.

3.5 Phase 2: Macro Genre Analysis

The second phase of this research involved a macro genre analysis, based on the corpus of scientists’ discourse, representing manuscripts submitted to the Journal of Rubber Research within the period of 2013 to 2015. The data set included 44 original submissions, together with 139 RRs, 39 ARRs, as well as 31 revised and published manuscripts upon acceptance. The textual, qualitative nature of data and analysis in relation to the research questions sketched out methodological concerns including limitations and suitability. Analysis of the rubber RA publication discourse event outlined descriptive approaches emerging from the manuscript pathways including stages which are required or optional, followed by characterisation of these stages as core and variations of the macro genre pathway. Results of this analysis mapped out the entirety of the dataset, including editorial correspondences and texts that make up the key

stages of a manuscript's pathway along the process from cradle (initial enquiry) to grave (publication or lack of it) as it were. Taking into consideration findings from the previous case studies, the boundaries within which specific editorial decisions take place are a benchmark in this rich descriptive macro generic analysis of the overarching discourse event.

A build-up of exchanges between interlocutors (authors, editor and reviewers) during the progression of rubber RAs along the publication discourse event pathway assumed the notions of both a typical macro genre pattern and its variations, respectively. The macro genre analysis integrated macro stages of Initiation (beginning), Evaluation (middle) and Conclusion (end) in the overarching discourse event. Each of the macro stages involved different combinations of interlocutors, i.e. authors, editors and reviewers, partaking in editorial correspondences and relevant genres which contributed to mapping the macro genre. Further, this analysis confirmed the sequence (where in each stage) and iteration (how often) of both obligatory and optional elements, as they occurred in the data set and from my insider perspective as an editor.

The obligatory elements for each stage reflected a typical macro genre pattern which comprised the core genres towards achieving publication. In that regard, analysis of texts and discourse exchanges to determine a particular set of obligatory elements in each stage led to the typical genre pattern for rubber RA publication. Chapter 5 will discuss the notion of this typical genre pattern which consisted of obligatory elements in each macro stage contributing to their respective contextual configurations (CC). Interpretation of each CC in reference to register variables and the goals of each macro stage allowed for a clear definition of the corresponding CCs. Analysis of manuscript pathways within the dataset revealed instances of a typical macro genre pattern and its variations including the core genres for these macro stages. This involved the identification of obligatory and optional elements in each macro stage, in sequence that contributed to the CC of a particular stage while eventually contributing to the overall social purpose and macro generic goal.

Ensuing this analysis was confirmation of specific optional elements in each macro stage and respective iterations that in some instances led to variations in the genre pattern. Further analysis on points of contention and difficulties in realising the ultimate social purpose will allow for an exhaustive account of potential threats in sketching boundaries of the macro genre. The methodology for this qualitative analysis involved studying rubber RA pathway trends in each stage as a result of validating occurrences of both obligatory and optional elements based on a specific sequence and subsequent iterations of each macro generic stage to reflect an

entirety of the publishing process as a discourse event. Results of the analysis will serve to reiterate and derive registerial variables of field, tenor and mode of discourse pertaining to each stage of the macro genre, and consequently the CCs that contribute to specific goals for each macro stage. The analysis aimed to determine a specific sequence of obligatory and optional elements with regards to where they must (core) and can (variation) occur, respectively. The final stage of the methodology for this analysis focused on case specific iterations of how often these elements can and do occur, in distinctly mapping out a generic structure potential (GSP) for the rubber RA publication macro genre.

The entirety of the rubber RA publication discourse event was studied to yield a potentially rich description of stages and texts involved in mapping out a macro generic perspective. This comprehensive analysis will contribute to sketching boundaries of the macro genre, with clearly defined stages and combinations of interlocutors contributing to the social purpose, ultimately tying obligatory elements together towards success in the genre while discussing crucial areas of failure.

3.6 Phase 3: Semantic Coding Analysis

The core genres of RRs and ARRs reflected participants' involvement in a matrix during the macro stages of Evaluation and Conclusion. They involved a potentially complex dialogue in writing within the rubber RA publication macro genre. A semantic coding analysis of both genres served to reiterate findings from the case studies (Phase 1) and genre parameters (Phase 2), respectively.

Similar to the previous two phases, for this analysis, data were extracted from the journal's online portal, namely the JRR Editorial Manager® platform. The use of computer aided qualitative data analysis (CAQDAS) was parallel to current and recognised qualitative research in the social sciences. Kelle (2004) suggests that although the CAQDAS software does not perform the actual analysis, it aids data management and acts as a digital tool for "data administration and archiving" (p.486). The nature of electronic data, coupled with the computer's ability to compile large quantities of it, facilitated the processes of coding, storing and retrieving information, as well as word processing functions including text search, memoing and accessing multiple texts, which were all fundamental to qualitative research.

CAQDAS helps to unify both data display and hierarchical organisations in an orderly manner as described in the coding process to allow for a multi-level analysis. Miles and Huberman (1994) suggest that this range of functions benefit qualitative researchers in

developing perspectives considering the comprehensive and meaningful presentation of data for the purpose of rich analysis that lead towards emerging concepts and theories. The Atlas.ti version 7.0 software supported this analysis, carefully chosen based on its user-friendly interface and provision for data in various illustrative forms, i.e. textual and graphical as well as audio or video form. The nature of data for this project was predominantly textual in combination with tables and figures that were part of the rubber RAs. The features of Atlas.ti allowed for importation and compilation of data with a high degree of success in the above forms under a single platform categorising the project title as a Hermeneutic Unit (HU). The software facilitated exploration of codes and organisation of metadata which were key aspects of qualitative analysis. This enhanced reliability in triangulation of data and methodology selection for the present research towards validation of findings, emergent themes and patterns while eliminating overlapping domains.

Phases of this research conventionally incorporated the iterative nature of qualitative analysis, whereby data collection, analysis and interpretation eventually led to reiteration in the processes of coding and re-coding data categorically, in a non-linear manner based on emergent trends and results. I determined an endpoint for data extraction for this study covering a period of 2 years, i.e. submissions and correspondences from June 2013 – June 2015. This was done in order to avoid gathering too much data which affects the element of detailed reflection in the analytical and interpretation stages. This selection realised the notion of “saturation” (p.139), by Richards (2005) as a point where newness of information, data, ideas and categories level off, when the researcher gains a sense of data relevance and is able to filter information that is out of the scope of the present research. He further emphasizes, however, that the terminology only remains indicative of the depth and level of data and analysis employed.

Dörnyei (2007) also argues that another principle of qualitative data analysis is the researcher’s reliance on subjective intuition rather than the application of a formalised analytical procedure (p.244). The present study aimed for equilibrium at the level of analysis, in allowing the data to reveal the significance of results and findings in line with both these criteria. Subjectivity and reflection on the part of the researcher will pave the emergence of trends and new theories with a flexible, data-led approach. However, in concluding the research findings with considerable validity, Miles and Huberman (1994) highlight transparency in the processes of data reduction, data display and data interpretation. A similar emphasis in achieving transparency within the context of this research was by means of applying the SFL theoretical framework for the system of language at the levels of genre and register in data

analysis. Dörnyei (2007), targets standardisation in undertaking the challenge of qualitative data analysis towards achieving the notions of “rigorous flexibility” and “disciplined artfulness” (p.245). Finally, the decision to relate generic analytical moves such as “coding” and “memoing” (Richards 2005, p.69) in the context of a macro generic perspective and the qualitative semantic analysis served to delineate clearly defined staging of the overarching discourse event and specific meta-linguistic features correspondingly mapped onto theoretical SFL realisations at the levels of genre and register, while revealing grammatical tools, patterns and trends within this novel data set.

Qualitative content analysis involved the analysis of textual data based on occurrences of semantic categories and metalinguistic representation of words, phrases or grammatical structures. In a qualitative context, though, these semantic categories were a result of the data analysis and were not predetermined. Qualitative analysis also entailed interpretation of these data and categorical variations to support the fundamental macro generic and semantic analysis as opposed to quantitative accounts at a surface level. This element is regarded as “latent content analysis” (Dörnyei 2007, p.246), and is characteristic of the order of coding for themes, in a staged manner, identifying and interpreting trends towards the emergence of new theories (Ellis and Barkhuizen 2005). A specific discussion on the methodical processes of pre-coding and coding, developing forms of data display, interpretation of data and concluding findings of the analysis are based on the present research settings.

Richards’ (2005, p.69) notion of “purposive reading” represents the stage of pre-coding, to reveal a process of becoming accustomed with the data in a profound manner by reading and reflecting on each data record inquisitively, while looking for ideas and themes within the text. Pre-coding of RRs and ARRs identified characteristic metalinguistic features that led to specific editorial decisions in the case of the 44 submissions under analysis. Classification of scientists’ discourses within the genres of RRs and ARRs were based on the initial categorisation of individual manuscript editorial decisions:

- i. Major revision
- ii. Minor revision
- iii. Reject and Resubmit
- iv. Reject

Inter-reviewer rating correlation between RRs for each submission in the corpus was a means of initial familiarisation with the data as a preparatory step prior to coding. A significant

variation in RRs were comprehensive evaluation of manuscripts as opposed to less exhaustive feedback. Analysis of ARRs contributed towards genre specific features of the discourse, in identification of obvious trends and structures, i.e. acknowledgement and justification with respect to reviewer comments. The following stage was a coding process in an effort to integrate specific themes into a meaningful framework. Initial text analysis and labelling of meta-linguistically oriented categories and their respective descriptions helped to align the data semantically.

Extracts of RRs and ARRs were highlighted in segments, to enable labelling and simplified identification towards a process of retrieving groups of texts that represented a particular metalinguistic feature. This process was done electronically, aided by Atlas.ti 7.0. The software allowed for coding in an organised manner, whereby a description for each code is recorded and overall management is facilitated by the “code manager” application, allowing for hierarchical orders and grouping based on interrelated categories that emerge from the iterative coding process. Emergent themes from this stage were built in an iterative manner towards qualifying data segments and linking them towards the SFL theoretical framework, at the level of register. Analysis of the coding process in this phase indicated specific code categories with structural, functional and technical aspects of texts in both genres of scientists’ discourse. Reiteration of this process occurred in stages throughout the analysis involving gradual replacement of the initial and originally coded extracts with representative “pattern codes” (Dörnyei 2007, p.251). This iterative process of coding and repetitively exploring the data at a semantic level resulted in the revision of original codes and emergence of salient classification of data segments. The comprehensive coding process leads to working with collective data segments under a semantic code, to gain insights into the discourse specific linguistic features they represent (Richards 2005, p.86).

In the initial coding stage, codes were representative of any extract within the dataset yielding a potentially significant impact on the overall process of scientific writing as well as the ultimate social purpose and goal of the discourse event to achieve rubber RA publication, even if seemingly irrelevant to the specific research questions. This stage allowed for awareness at the macro genre level and scientists’ discourse semantics, as well as insights on metalinguistic considerations in scientific writing for rubber RA publication. Specification and labelling of codes were reliant on aspects of clarity and transparency, combined with an explicit description of code properties. Validation of the coding process by means of second-level coding, with further analysis in identification of related categories that can be collectively

labelled from the coded data generated a hierarchy of codes according to distinctive meta-linguistic features within the data set. Revision and fine-tuning of this code listing was carried out in later stages with individual analysis of the groups of data segments realised at the stratum of register in an SFL context. Codes were eventually semantically mapped onto registerial variables of field, tenor and mode, reflecting consistent patterns and emerging trends within the dataset.

Structured reflection is an indispensable analytical tool in the realm of qualitative analysis, towards the generation of derived data. It provides a variant form of data display and a means of growing ideas of the collective data segments labelled under a specific code. The process of memoing contributed directly in noting thoughts and ideas while exploring the coded data. Memos are referred to as “working ideas, which may or may not pan out in the fullness of your analysis” according to Lynch (2003, p.138). Preparation of story like “vignettes” in addition to memos helps narrate a focussed rich description of events in a representative nature to a particular phenomenon (Dörnyei 2007, p.255). This feature was a significant contribution towards mapping of manuscript pathways within the dataset to reveal key stages and central texts that led to an overarching macro generic perspective of the rubber RA publication discourse event.

The semantic potential of qualitative data is realised through a concise visual illustration, or data display, described by Miles and Huberman (1994, p.11) as “an organised, compressed assembly of information that permits conclusion drawing and action in easily understood configurations”. They suggest depiction of schema in a variety of categorical mapping and network views as significant means of drawing effective interpretations and inferences, which represent the final phase of qualitative data analysis. Interpretation of data took place as an iterative and continuous progression from the stage of coding and memoing, towards familiarisation of the dataset along with developing awareness in conceptual and fundamental implications. However, the final phase of interpretations transforms selected predominant findings into final conclusions that offer solutions to the original research questions (Dörnyei 2007). This consideration is pertinent in view of representing the rubber RA publication macro genre as a system comprising obligatory, optional and peripheral elements.

Grounded theory comprises the three level method of coding, which served as an extended reference to the generic coding process for this research. The first level was a conceptual perspective termed “open coding” (p.55), involving exhaustive probing of each data segment

prior to assigning a code opposed to a descriptive or interpretive category label to stimulate new ideas and emergent concepts present in the dataset (Strauss and Corbin 1998). Following this stage, Strauss and Corbin (1998) coined the term “axial coding” (p.61) to correlate data categories metaphorically in the second level of this procedure, also referred to as “theoretical coding” (p.89) by Glaser (1992). Reanalysis of the previously coded data was carried out before refining the codes and clarifying associations on the existence of a pattern, as suggested by Creswell (2005).

Dörnyei (2007) describes the third level of this coding procedure as “selective coding” (p.261), which implicates focussing in and narrowing down on a salient category within the dataset for the final stage of analysis and the writing up of research findings. Integration of the processed data at each level of coding subsequently revealed a theme based on a particular category as a central point that brings together the overall dataset and other categories logically. The explanatory nature of a proposed theory depending on the research outcome reflects variability compared with previous works and can be valuable in the light of existing literature to enhance domain specific knowledge (Fassinger 2005). The application of an organized and comprehensive procedure for coding served to validate both methodology and resulting findings in the context of this research.

Beginning with the compilation of RRs and ARRs, on a Hermeneutic Unit (HU) on Atlas.ti entitled *JRR Research Articles*, Primary Documents (P-Docs) were created for each manuscript submission selected for the analysis, and categorised according to the editorial decision respectively. The categorisation of 44 P-Docs representing submissions for the analysis comprised:

- i. P1 to P21 coded as Accept_Major01 etc. to indicate submissions with an editorial decision of Major Revision prior to acceptance
- ii. P22 to P31 coded as Accept_Minor01 etc. to indicate submissions with an editorial decision of Minor Revision prior to acceptance
- iii. P32 to P35 coded as Reject_01 etc. to indicate submissions with an editorial decision to be Rejected
- iv. P36 to P44 coded as Reject_Resubmit01 etc. to indicate submissions with an editorial decision to be Rejected and Resubmitted accordingly.

P-Docs i.e. P1 to P44 connoted scientist discourses in the pathway towards the editorial decision for each submission, realised by the dialogic nature of RRs and ARRs. The notion of

dialogism as discussed by Bakhtin (1981) is directly associated with the publication pathway. The communication from the very beginning of inquiry/manuscript submission stages involved readers, i.e. editors and reviewers, engaging in a professional and formal dialogue with the writers, i.e. authors of the rubber RA, and vice versa. Indication of distinct markers of the dialogue in the publication discourse event macro genre are reflected throughout the process pathway via original submissions, iterations of RRs and ARRs, revised manuscripts and published rubber RAs.

The SFL theoretical framework provided a means to code the metalinguistic features of the RRs and author responses. A descriptive analysis aimed at each of the categories of functional comments, structural comments and technical comments based on their correlation with SFL register variables is described accordingly. The category of functional comments reflected language considerations and grammatical style while structural comments were related to the generic expectations in each section of the rubber RA. Technical comments were associated with Scientific English writing style and metalinguistic considerations in that respect. These categorisations contributed to the understanding and awareness on metalinguistic features affecting success of the rubber RA publication macro genre. This analysis encompassed the formal and functional approaches in investigating the nature of texts, determining discipline specific metalinguistic features revealed by the genre of RRs. The purpose was parallel to revealing strengths and weaknesses in the context of scientific writing related to rubber RA publication. Each code is marked based on numerically grounded quotations within the original data set. The codes representing metalinguistic characteristics related to scientific writing and rubber RA publication will be described individually, while numerical representation of quotations indicated severity of each issue based on frequency counts. A description of each code and its significance with respect to the data and overall analysis will follow in Chapter 6.

The values of overall proportions of RRs comprising each code and proportions of RRs recommending rejection of rubber RAs comprising each code represent the variables of quantitative analysis for this phase. The number of RRs comprising each code (a) as a proportion of total RRs (139) allowed for the calculation of the proportion of RRs comprising each code (c), according to Equation 1 below.

$$(a)/139*100 = (c) \quad \dots \text{Equation 1}$$

With the base value (a) and number of RRs recommending rejection of rubber RAs comprising each code (b), the corresponding proportion of RRs recommending rejection of rubber RAs comprising each code (d) is determined as per Equation 2 below.

$$(b)/(a)*100 = (d) \quad \dots \text{Equation 2}$$

Code quotations and data extracts indicate overall issues with specific sections of the rubber RA from the perspective of structural metalinguistic issues, along with descriptive memos in reference to particular codes. This semantic category and specific elements within the data set were mostly in association with the mode of discourse. Results from this category also described specific genre parameters that reflected an orientation towards both field and tenor of discourse, respectively. Both technical and functional semantic categories comprised codes that represent patterns of results within the data set that reflected the field of discourse. Technical metalinguistic codes realised the field specific domain of Scientific English concerns. Linguistic patterns highlighted by both RRs and ARRs characterised risks with and weaknesses of the rubber RA, as an evolving central artefact. Awareness and understanding of the functional metalinguistic issues pertaining to the field of discourse in the light of gaining acceptance for publication involved the processes of scientific writing and rubber RA publication as circumstances of this research.

The three major categories of metalinguistic issues in rubber RAs and six classifications from coding of the ARRs are a result of the iterative coding process. Semantic coding of ARRs was done in relation to genre expectations and variations within the dataset. Categories of responses reflected author's understanding of the application and purpose of this genre in practice. These codes and corresponding proportions as a result of the analysis also revealed the awareness levels of discourse skills among participants.

Semantic categorisation of reviewer feedback revealed structural, functional and technical metalinguistic issues as a reflection of key strengths in cultural practices of scientists, as well as weaknesses that exist in the processes of scientific writing and rubber RA publication. Specific codes within each category represented these metalinguistic issues and an association to SFL registerial variables within the context of situation. Realisation of metalinguistic characteristics in regards to field, tenor and mode of discourse further contributed towards the expansion of registerial analysis for this discourse event and linguistic studies that determined the genre parameters with respect to the process of scientific rubber RA publication.

Quantification of the respective semantic codes for ARRr involved a single variable of the corresponding proportion of codes in ARRr (f), with reference to the number of ARRr comprising each code (e) as a proportion of all ARRr according to Equation 3.

$$(e)/41*100 = (f) \quad \dots\text{Equation 3}$$

The descriptive approach in discussing the qualitative and quantitative analysis of RRr and ARRr supports the motivations of this research. Quantification of code proportions within the data set for each semantic category along with corresponding qualitative realisations will reveal the levels of awareness and application of metalinguistic considerations in scientific writing for rubber RA publication. Although there was an indication of regularly occurring trends within the dataset, infrequent instances were equally important towards achieving comprehensive awareness, understanding and application from the perspectives of registerial variables in association with metalinguistic issues. Results of this analysis allowed for assessment of which variables created a noticeable risk to the social purpose of the overarching rubber RA publication macro genre. The macro generic perspective based on manuscript pathways, combined with semantic analysis of RRr and authors' responses led to the development of a dialogic approach and guideline for authors.

3.7 Phase 4: Analysis of Survey Results and Triangulation of Research Findings

For the final phase of this research, the focus was a top down perspective on addressing the level of awareness and understanding on cultural practices via an online survey questionnaire on scientific writing and RA publication, included as Appendix A. Survey participants were among scientists affiliated with research and academic institutions locally who represented the disciplinary community for this study. This selection allowed for an indication on levels of awareness and understanding with regards to metalinguistic considerations in scientific writing and macro generic aspects of the RA publication process. The resulting information and feedback provided contextual data for this study while attempting to reveal knowledge gaps, considering participant experiences and perspectives on scientific writing for RA publication. In an effort to find answers to questions in a systematic and disciplined manner, the survey questionnaire was among the most prevalent research instrument for social science research purposes. This was particularly due to its versatility and means of compiling data in a timely, effective manner, bearing in mind ease of construction and large amounts of data that can be collected (Dörnyei 2007: 102). Among its limitations, however, are that survey items are naturally simplified for clarity and understanding on the part of respondents and this has a

direct impact on the depth of study, together with social desirability biases that are inevitable (Gillham 2000).

Questionnaires are “any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers” (Brown 2001, p.6). In this particular case, the nature of information that resulted from this research instrument were facts on demographic and sociolinguistic characteristics among participants, behavioural information on sociocultural practices with regards to scientific writing and RA publication, as well as attitudinal related opinions, beliefs, interests and values. This effort represented a non-evaluative manner of data collection with a focus on eliciting information about participants, circumventing boundaries of good or bad answers.

Design and formulation of questions were based on the underlying research questions and problems that led to the existing gap in available literature in scientific writing and RA publication, in the Malaysian context. Aspects pertaining to the theoretical framework of SFL underpinning this research served a relational purpose in analysing survey feedback. To reveal discipline specific awareness among participants, the survey questionnaire was inclusive of metalinguistic features reflected in the genre of rubber RAs, macro genre features and grammatical tools for scientific writing based on the SFL analysis resulting from the first two phases of this research. The survey questionnaire comprised a majority of closed ended questions involving Likert scale responses with relatively fewer open ended questions requiring textual responses. Further considerations in formulation and design included the format of sub sections consisting of title, participant information, participant consent, questionnaire items and a final thanks acknowledging participation. The item sequence and order of questions focussed on salient aspects of the research process allowing for a variety of scales to ensure accountability on experiences and practices of participants. In order to avoid resistance in participant responses, open ended questions and factual information were included towards the end of the questionnaire.

Prior to the development of a draft, literature on questionnaire and survey criteria as well as a review on strategies and concepts of researching writing were helpful to enlighten my perspectives on achieving the objectives of the survey. Further efforts included drawing up as many ideas on issues resulting from the first and second phases of this research, i.e. case studies and macro genre analysis. A clear perspective on emerging risks and rewards with regards to

scientific writing and RA publication facilitated the process of developing the draft and piloting the questionnaire. I submitted an application detailing the research project, participants and methodology to the Ethics Committee for Faculty of Arts and Science, University of Nottingham Malaysia as described in Section 3.2 above and this ethics application was approved accordingly.

Initial piloting of the draft items among colleagues within the faculty, namely my supervisors at the University of Nottingham Malaysia, Dr. Derek Irwin, who is an expert grammarian and functional linguist, Dr. Ahmad Izadi, a pragmatics expert in English as well as two other colleagues within the MRB fraternity: a social science expert with a psychology major and a prominent scientist. Among the feedback for improvement were their perspectives on word choice, overall consistency and format of the survey questionnaire. For further feedback upon subsequent revision and incorporation of amendments, a second pilot run was carried out among three colleagues at the School of English, UNMC. Following this stage was a final piloting among a pool of three scientists within the Malaysian Rubber Board who were representative of rubber research scientists in the upstream, midstream and downstream domains, respectively. The final pilot run was a reflection of how the items will function, in view of participants' response in accordance with the research aims and intentions of this study.

Following this, analysis of individual items and feedback from the final piloting helped to identify missing responses or misunderstood instructions, range of responses for individual items, as well as consistencies of scaled responses. The final piloting procedures and item analysis were repeated to eliminate items that have not performed accurately before administration of the final questionnaire. The questionnaire was built on a user-friendly Google.doc platform, hence it was easily accessible via a URL link distributed by email and social media (Whatsapp). The questionnaire and data pertaining respondents' feedback will be discussed in Chapter 7.

Quantification and analysis of feedback from respondents to this online questionnaire was based on majority likelihood and individual concerns affecting understanding and awareness on the processes of scientific writing and RA publication in Malaysia. Scientists' knowledge of related discourses and professional experiences represented a projection of trends with regards to these processes. Results of this analysis contributed contextual information towards the research questions and validated the state of realisation among participants with regards to macro genre expectations of a scientific RA, dominant metalinguistic features and grammatical

tools such as hedging, boosting and nominalisation in scientific writing. The questionnaire aimed to indicate the level of awareness on the process, specific aspects and perspectives of RA publication among scientists in research and academia locally.

Demographics of the 60 survey respondents included age category, specification of their professional affiliations (academia or research bodies), the average proportionality of scientific writing in their work routine, number of publications accepted by peer reviewed journals (as a main author and co-author, respectively), number of postgraduates supervised and number of manuscripts reviewed for journals. An assessment of these criteria provided insights on the discourse community structure and validated further evaluation on their levels of awareness and understanding with regards to feedback on the various issues surveyed. Selection of variables from these participant categories to further analyse participant feedback involved charting a graphical representation of the above information, included in Chapter 7. Number of publications as main author was considered the most appropriate variable to account for variations in participant feedback on awareness of metalinguistic and macro generic features with regards to scientific writing for RA publication. Further, juxtaposition of survey feedback with results of the case studies, macro genre and semantic coding analyses indicated a confirmation of knowledge on these issues and their corresponding levels of application in practise towards triangulation of research findings and future recommendations.

3.8 Summary

The methodology adopted in each phase of the analysis are guided by the SFL theoretical framework at the levels of genre and register. A bottom up focus on the overall data set was carefully chosen as the appropriate methodology for triangulation of data analysis and validation of findings in correspondence to the research questions. The case studies closely examined the development of rubber RAs within the dataset from the perspective of how they moved through time. These results are further enhanced quantitatively in the macro genre and semantic coding analyses to reveal macro generic features, characteristics, decisions, reactions and/or preferences which were identifiable within the dataset comprising 44 original submissions, 139 reviewer reports, 39 author's responses and 41 revised submissions. Feedback from 60 participants of the survey questionnaire then provided real world feedback in the research on the findings from the preceding three phases of analysis. Juxtaposition of findings and results from each phase of the analyses offers the thesis a means to correlate what scientists know and understand together with the insider knowledge on my part.

CHAPTER 4

Multiple Case Studies Analysis

4.1 Introduction

My data in this chapter follows the bibliogenetic development of three rubber RAs submitted to JRR for consideration of publication, from the perspective of how they are differently affected by a number of participants: the researcher(s), the journal editor(s), and the reviewers as interlocutors of the overarching discourse event. The first case represents an unproblematic publication, with a minimum of corrective feedback, and the second a circuitous route to publication, with a significant amount of interaction between the participants. These two are then contrasted against a case of rejection. This chapter thus brings attention to the crucial role of understanding the various kinds of readers of whom writers of such texts should be aware.

4.2 Context of Analysis

As already discussed, my approach to the rubber RA recognises that the article itself is generic in nature (in line with Martin, 1995 and 1997, but also Swales 1996 and those using his framework above). Further, though, I approach this genre from a larger perspective: one in which it represents one of an interlocking series of other (sub-) genres, such that it's unfolding over time encompasses these sub-genres to create an over-arching discourse event that I label the "rubber RA publication macro genre." This overall event is social, in that it involves a number of people interacting, goal-oriented in that there is an ultimate purpose of seeing a quality publication into print, and staged because each of the sub-genres (for example, Inquiry, RA, Reviews, Responses) occur in a particular order necessary to that social goal. The rubber RA itself represents a genre which is bibliogenetic in its forms as a Submission, Revised Submission and ultimately (hopefully) as a Published RA.

To clarify, I will be referring to three different macro stages of the over-arching discourse event, called Initiation, Evaluation and Conclusion respectively. Each of these are themselves composed of varying texts representing (micro) stages in the macro stages, and indeed each of the texts which comprise these stages are themselves generic in nature. For example, the Initiation is typically realised through a Submission, the first iteration of the rubber RA and

some form of Cover Letter, along with a technical check in the form of an assessment prior to an Acknowledgement from the editor.

The Evaluation initiates the peer review process, and involves Invitation and Assignment of reviewers, submission of RRs with comments to the editor and author, ending with Acknowledgement of Reviewers. The macro stage of Conclusion then incorporates an Editorial Decision of conditional or unconditional acceptance, (or else rejection of the rubber RA prior to revision), which leads to submission of the Revised RA and ARR. Re-evaluation of the rubber RA by the editor in this stage then progresses towards either a reiteration of the stage of Evaluation (for rubber RAs involving major revision), or the editor may request minor amendments before an Unconditional Final Acceptance of the rubber RA for publication. The entirety of the process, including all of the texts which are involved in achieving the social goal, comprise the macro genre. There are different discourse (micro) stages which are made up of one or more texts, sometimes in written dialogue (such as RRs and ARRs); each of the texts (from the perspective of the macro genre, themselves a micro genre) bear a different ‘load’ in terms of the importance to the macro genre: the central artefact of the rubber RA in its various bibliogenetic incarnations (Submission, Revisions, Final Draft), which represents both the start and end goals of the macro genre, and for that reason I separate out these into a category labelled “Central Texts.” The following chapter includes Figure 5.1, which is a complete picture of the macro genre which this chapter leads up to.

Field of discourse in the context of JRR is explicitly associated with rubber science research disciplines. Studies in rubber sciences comprise the fields of upstream, midstream and downstream research (Malaysian Rubber Board 1998). Upstream research represents pure science domains ranging from biosciences, molecular biology, biotechnology as well as agriculture disciplines related to breeding, clones, plant pathology and other crop research areas, specifically crop management, improvement and protection. The midstream disciplines consist of processing and pollution based research, while downstream research encompasses engineering and product design, advanced rubber technology, latex science and technology as well as chemistry and materials exploration.

Tenor of the discourse is highly formal, with marginal distances in time and potentially large distances in space and academic status between members of the discourse community. From the perspectives of varying subject specialities and levels of expertise, a pool of editors,

reviewers and authors form the knowledge based discourse community holding power over the RA writers.

Concerning the mode of discourse, scientific communication in the context of JRR adopts a multimodal representation of primarily written texts, observed in the macro genre of the RA publication discourse event, from inquiry and submission towards an editorial decision on RAs. The central artefact texts are regularly accompanied by visuals in the form of figures comprising graphs, charts, images as well as equations, scientific formulae and tables.

These case studies will also serve to explore areas in which the macro genre is at risk of failing in its social purpose, potentially due to negotiation of the system by inexperienced interlocutors. The multiple case study analysis does this by looking at the overall discourse event, while also examining the central artefact of it – the rubber RA submission – from a lexicogrammatical perspective to recognise elements which traditionally are held responsible for lack of publication: poor methodology, structure, writing conventions, reporting of results and other text problems. However, the analysis ultimately takes the SFL view of language as a social semiotic, occurring in a specific cultural context (Halliday 1973, 1978, Halliday and Matthiessen 2004, Martin 1992). This association is formed in the course of participation in an existing culture which is recognised by its social practices, synchronously epitomised in events and recognisably shaped texts (Halliday & Hasan 1985, p.46). The social semiotic is not here limited to the singular text of the RA, but rather comprises all of the texts which make up the publication process. In expanding the scope of study, I identify potential problems to publication which go beyond considerations of the central artefact itself, though I deliberately refer to the rubber RA in this fashion, as it is the crucial link between writer(s) and potential readers.

4.3 Progression and Evolution of the Rubber RA

There are various pathways a submission may take before it is either published or rejected, and these represent the potential boundaries of the macro genre. The discourses therefore move through time, leading to editorial decision categories of major revision, minor revision or else reject or resubmit. All participants are involved in a matrix throughout the phases of peer review, revision and publication, which in turn comprise a potentially complex dialogue in writing. As in the staging of any genre, some stages are obligatory (such as submission and judgement), while others are either optional, or else dependent on preceding choices (re-

submission, for example, depends on an editorial judgement for peer review, and then a set of RRs which recommend such a result).

Progressive points in the analysis are thus initiated from the stages of submission and initial acceptance for the review process, followed by the selection of reviewers. RRs are scrutinised by the editor with respect to the recommendation and feedback from these field experts, focusing on specific strengths and weaknesses with respect to scientific writing in the context of rubber RA publication. The journal editor as the ultimate evaluator of RRs confirms a designated editorial decision on the rubber RA. Further examination of author replies to this feedback in view of Revised RAs and ARRs are also undertaken by the editor. Both these macro stages are reiterated in circuitous routes towards publication involving major revision, while rubber RAs that undergo an uncomplicated path towards publication involve a single iteration. Rubber RAs selected as representative of both these categories of editorial decisions are then further contrasted against prominent features in a rubber RA that ultimately faced rejection or resubmission. The case studies reflect aspects of awareness and understanding with regards to characteristic metalinguistic features, grammatical tools and macro generic discourse skills ensuring success and risks of failure in technical communication by novice writers in Malaysia.

The goal of these case studies is to characterise the boundaries within which specific editorial decisions take place. What follows is an outline of each case with details of particular trends emerging from the discourses involved. In each case, the entirety of each manuscript pathway will be described, and an analysis of rubber RAs as well as the genres of RRs and ARRs will be developed. Correspondence between participants of the discourse outlines and defines the manuscript's pathway. I place each case into an array of micro genres representing stages in the overarching discourse event from start to finish, which then informs the more quantitative approach in the following chapter.

4.4 Case Study 1 – Unproblematic Pathway

The first case study progresses along an unproblematic pathway towards publication. There are 8 micro stages, from the initiation of the discourse event upon submission, and with only a single iteration in the macro stage of Evaluation, prior to the macro stage of Conclusion involving (minor) revision and final acceptance. The micro stages of the overarching discourse event are manifested in language by the rubber RA (A), RRs (B) and ARR (C), supplemented

by the micro genres of editorial correspondences (a) to (k) in the form of letters to and from the Editor by both author and reviewers. As opposed to the more problematic following case, there are fewer micro stages in transition throughout the discourse event, with major variances being the absence of a pre-submission enquiry stage, as well as a single iteration of the macro stages of Evaluation and Conclusion. A contrastive macro genre analysis of both cases also demonstrates differences whereby the bibliogenesis (Charlotte and Irwin, forthcoming) of the RA is only realised over three instances here: the rubber RA submission (A)(I), RA Revision (A)(II) and Published RA (A)(III).

This submission was reviewed by three Editorial Board Members of JRR, who are field experts in Chemistry and Technology. With regards to contextual sociolinguistic aspects of participants, the author was an L2 scientist, while reviewers 1, 2 and 3 were L2 scientists as well. RRs (B) (I), (II) and (III) were supplemented further with specific comments to both Editor and the author (e), followed by acknowledgment and thanks (f) by the Editor. Reviewers agreed in terms of field elements as manifested in the technical aspects of Scientific English. Concerns regarding the technical domain included a brief expansion to the methodology for specific results as well as the lacking of definition of abbreviations for taxonomies upon first mention in the text, while the only issue pertinent to the linguistic domain were minor grammatical errors. So far as modality is concerned, the reviewers(s) gave positive comments on the overall structure of the author(s)' RA sections, and noted that the paper did not conform to the journal's house style. It was suggested that the formatting of the RA be done in accordance with the house style concerned, and some improvement be made on the representation of illustrations, particularly to avoid imprecise tabulation and undefined superscripts. From the perspective of tenor, a smooth and uncomplicated dialogue between author, editor and reviewers occurred throughout the stage of submission towards an editorial decision of conditional acceptance subject to minor revision; this was then followed by the revised submission and response to reviewers based on comprehensive feedback addressing minor amendments prior to the final acceptance.

Micro stage	Central Text	Editorial Correspondence
1. Submission	Rubber RA submission (A)(I)	Cover letter to Editor (a)
2. Editor Approval	n/a	Letter of acknowledgement (b)

3. Peer review Process initiation and follow up	n/a	Reviewer invitation letter (c) Reviewer Acceptance, followed by acknowledgement (d) (i) Reviewer declines invitation (d) (ii) Reviewer Reminder (d) (iii) Reviewer uninvited (d) (iv)
4. Peer review process outcome	RRs (B) (I), (II), (III)	Comments to editor/author (e) Reviewer thank you letter (f)
5. Editorial Decision	n/a	Letter with summary of decision and RRs, confirming conditional acceptance subject to minor revision (g)
6. Revised submission	RA Revision (A) (II) ARR (C)	Cover letter to Editor (h) Acknowledgement (i)
7. Editorial Decision	n/a	Letter confirming unconditional /final acceptance (j)
8. Editorial Stages towards Publication	Published RA (A) (III)	Author's consent to publish, based on proofs (k)

Table 4.1: Case 1 – Unproblematic route to publication

The key points below (Table 4.2), outline minimal risks in the macro genre of the overarching publication discourse event. The tenor success of the formal dialogue between participants and mastery of modality via structural issues are strengths of discourse skills in this iteration. The author's ability to realise the registerial concerns and engage with both reviewers and editors led to success within the publication discourse event.

Reviewer feedback	Author's Justification
Lacking description in methodology, on specific results presented	Methodology described in accordance with reviewer suggestion, incorporated into the revised RA to clarify potential reproducibility
Abbreviation undefined upon first mention in text	Specific abbreviation defined accordingly in the revised RA
Figure legends undefined	Definitions to footnotes incorporated

Table 4.2. Case 1 – Summary of author's response to reviewers, ARR (C)

Where this is realised in the changes to the central artefact is actually incredibly minimal, and is only seen in the following: seven replacements of numerals under 10 with spelled versions (and, incidentally, a large number missed); the introduction of three acronyms upon first mention; the addition of a comma in the abstract after a hypotactically related clause; the addition of four blank lines under subtitles (and the missing of one); the addition of two additional references for software; the correction of a concord issue (“help” to “helps”). Additionally, there are a few lexical shifts, in that “almost” is corrected to “most” within a nominal group; “works” is replaced with the formalised “studies”; the clarification of methodology is achieved solely with the addition of the passive material clause “The amplification was repeated thrice”; nominal group “The symptom of disease” is replaced by the more codified “The infection score”; the mental verb “interpreted” is replaced by the verbal “described”; and finally the typo of “almost” is replaced by the proper predeterminer “all” and in the same sentence the epithet “slight” is formalised to “negligible.” These extremely minor changes, though, are used to demonstrate compliance in the tenor role expected from the discourse event, and are framed in this fashion in the ARR (C). Thus the discourse reveals amenable compliance while the actual changes made are not substantial.

4.5 Case Study 2 – Circuitous Pathway

The second case study is much more sizeable in its macro generic realisation, progressing through 17 micro stages in transition towards an Editorial Decision confirming “unconditional/final acceptance”. These micro stages are delineated in Tables 4.3 to 4.8 below. The 12 micro genres representing editorial correspondences between author, editor and reviewer have been identified and labelled (a) to (l), supplementing the genres of rubber RA draft (A)(I), rubber RA submission (A)(II), RA Revision 1 (A)(III), RA Revision 2 (A)(IV) and Published RA (A)(V), RRs (B) (I), (II), (III), (IV) and (V), and ARR (C) (I) and (II), throughout the discourse event. These micro genres largely encompass letters to and from the Editor.

In view of major points of contention during the discourse event, the RRs and editorial decision have a strong impact on the revised submissions in each iteration of the macro stages of Evaluation and Conclusion. In this case, there were 3 iterations of both these macro stages prior to final acceptance of the rubber RA.

Micro stage	Central Text	Editorial Correspondences
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1.Pre-submission	Rubber RA draft (A) (I)	Email inquiry (a)
2. Submission	Rubber RA submission (A)(II)	Cover letter to Editor (b)
3. Editor Approval	n/a	Letter of acknowledgement (c)

Table 4.3: Case 2 – Macro stage of Initiation (original rubber RA submission for consideration of publication)

The first micro stage of the discourse event was the pre-submission inquiry, with regards to the rubber RA draft (A)(I). This involved an email communication (a) initiated by the author, to the Editor in reference to final clarifications on citation formatting. Successively, the submission of the original rubber RA (A)(II) for consideration of publication was uploaded onto the journal's online platform along with a cover letter(b) to the Editor. Upon notification of a new submission, the manuscript was assessed for conformance to the journal's scope, format and structure as well as quality of illustrations before an official editorial acknowledgement was emailed(c). Approval from the Editor in Chief on prospective reviewers selected signposts the shift to the macro stage of Evaluation, and following this reviewer invitations (d) were sent out. Reviewers then subsequently acknowledged and accepted (e)(i), or declined (e)(ii) the invitation respectively and reminders (e)(iii) were emailed in view of the due dates assigned accordingly. When required reviews were completed, remaining reviewers were uninvited (e)(iv) accordingly.

4. Peer review Process initiation and follow up	n/a	Reviewer invitation letter (d) Reviewer Acceptance, followed by acknowledgement (e) (i) Reviewer declines invitation (e) (ii) Reviewer Reminder (e) (iii) Reviewer uninvited (e) (iv)
5. Peer review process outcome	RRs (B) (I, II, III)	Comments to editor/author (f) Reviewer thank you letter (g)
6. Editorial Decision	n/a	Letter with summary of decision and RRs confirming conditional acceptance subject to major revision (h)

7. Revised submission	RA Revision 1 (A) (III) ARR (C) (I)	Cover letter to Editor (i) Acknowledgement (j)
8. Evaluation of revised submission	n/a	n/a

Table 4.4: Case 2 – First iteration of Evaluation and Conclusion macro stages

This submission was reviewed by three Editorial Board Members of JRR, who were field experts in Chemistry and Technology. With regards to contextual sociolinguistic aspects of participants involved in the discourses, the author was an L2 scientist, while Reviewers 1 and 2 were English L1 scientists and Reviewer 3 an L2 scientist. RRs (B)(I), (II) and (III) were supplemented further with specific comments to both Editor and the author (f), followed by acknowledgment and thanks (g) by the Editor.

The first iteration of Evaluation highlighted issues with the context of discussion involving clarification on the inconsistency of information presented throughout the rubber RA. The scale of measurement for experimental materials was not indicated in a clear and consistent manner. The reviewers also agreed with concerns regarding the justification of claims, in reference to the author's statement, "it is strongly believed that the particles were well dispersed between the two phases", which involves an element of hedging but is unsupported by further evidence or grounds on which the claim is based. Reviewer 2 specifically indicated that in addition to there being no basis given for this belief, the evidence presented in the manuscript argues against it from a technical perspective. This aspect was raised in view of claims by the author particularly in the discussion section, which was not justified with substantial evidence in writing.

The significance of providing evidence for which specific claims are made clearly impacts the credibility and merits of the rubber RA as a whole. The issues with context of discussion, justification of claims as well as inconsistencies in information presented throughout this manuscript indicate risks and weaknesses in Scientific English writing. In the context of this study, they are mapped onto the field of discourse with regards to field specific concerns affecting the social purpose and goal of publication.

Reviewer 2 also pointed out issues of cohesion and sentence fragments, whereby incomplete sentences were highlighted, such as in reference to a sentence containing the list of materials used in the study which should end with "... were used". These comments on

coherence and inaccurate statements were highlighted in conjunction with the flow of meaning throughout the manuscript. Both these aspects were related to the discussion section in particular, concerning sentences that should reflect interconnecting meaning on specific details, but do not correspond accordingly in writing. An example of this error is as follows: “in the context of the discussion regarding plasticising in the preceding sentence, the PANi.DBSA is not miscible with the PP and cannot, therefore, plasticise the PP”. Meta-linguistic awareness of cohesion and sentence fragments interact with issues of coherence and inaccurate statements to pose a threat towards achieving publication and thus combine in both concerns for authors over demonstrating field knowledge and achieving it via lexicogrammatical choices.

The final major issue was with regards to weak literature references, and Reviewer 2 suggested discussing published review articles by authors that are well-known in the field, an issue with inter-text heteroglossia. Reviewers also highlighted an issue with the representation of illustrations to reflect results of the research in a clear manner. The author was advised to work on the low resolution of micrographs to emphasise highlighted particles in the discussion of findings. Structural elements lining the discussion section, illustrations and literature references as sections of the rubber RA are modal concerns, and weaknesses in these areas likewise placed this article at risk.

In contrast, and on a positive note, the reviewers collectively agreed that the study contained original information along with adequate technical and experimental methods, material and data. The abstract was equally appraised as clear and precise. Thus it was deemed as contributing to the expansion of general field knowledge using appropriate means, and it was largely coherent outside of the multimodal elements.

Moving into the macro stage of Conclusion, the editor subsequently conveyed feedback from reviewers, with a summary of the above issues and an editorial decision of conditional acceptance subject to major revision (h), to be addressed by the author.

The author pursues this negotiation and formal dialogue in writing from this major point of contention, towards achieving the final goal of the overarching discourse event. In the RA Revision 1 (A)(III), submitted for consideration of publication, the author described improvements to the manuscript based on specific comments and amendments incorporated. In this light, the author initiated the response to reviewers (C)(I) with a formal acknowledgement on the feedback received and a clear listing of detailed corrections in a point form, to further support amendments incorporated and justification regarding issues

highlighted. Both the revised submission and ARR were supplemented with a cover letter to the Editor (i) summarising efforts on improving the manuscript. This was followed by an acknowledgement (j) by the Editor, prior to re-evaluation of the revised submission, as detailed in Table 4.5 below.

The field elements involved in this were Scientific English (itself comprising a register, but in this sub-domain more specific to technical elements) wherein the author provided clarification for consistency of information on materials (amount and measure in wt %) as indicated by Reviewer 1, by specifying details in the relevant text sections and illustrations. Next, the author paid particular attention to addressing the comments on justification of claims, whereby indication of evidence and grounds on which claims are based were identified and correlated in writing. Further reinforcement on the justification of claims was inferred in reference to the author's previously published work and findings, and cited accordingly. Clarification and confirmation of previous findings with respect to results of the present research was an unheeded aspect from the perspective of the author. In agreement with the reviewers' interpretations, the author clarifies and describes the aims of the research by means of further discussion from a microscopic view to accentuate the significance and enhancements realised in the study. Subsequently, the author's corrective efforts were focused on sentence fragments and cohesion related errors leading towards a clearer layout and flow of information. The author revised the RA based on each reviewer's consideration and provided detailed justification of amendments incorporated as well as clarification and explanation on the nature of the findings and their value (Table 4.5).

Reviewer feedback	Author's justification
Issues of specificity in writing with respect to material (chemical weight percent)	Requested specification complied with and amended accordingly
Lacking justification of claims and results reported	Confirmation and rationale incorporated to support claims in reference to results reported
Comments on title descriptiveness	The title is corrected as proposed.
Incorrect sentence fragments - methodology section	Correction incorporated as advised.
Lacking justification of claims made in the discussion of results	Author refers to previous works published (self-citations) to support claims made in the context of this RA, and expands discussion

	and reasoning to this effect in support of claims presented.
Justification of results reported	The author exemplifies evidence and elaborates on interpretation of results reported to support views presented, in responding to reviewer feedback and providing a clear justification and reasoning for indications queried.
Justification of results reported	Author agrees on this view with the reviewer however proceeds to support range of results presented specifically in the context of this study and confirming the research objectives that are achieved accordingly.
Omitted literature references are proposed to strengthen the present work in the light of citing a review article published by field experts.	The recommended document is cited as a new reference

Table 4.5: Case 2 – Summary of author’s response to reviewers, ARR (C)(I)

Somewhat surprisingly, though, this revision process was met with extremely minimal changes in the central artefact; a word-by-word comparison of the RA Submission with the RA Revision 1 reveals that the only in-text changes are the correction of a spelling mistake in the title (“Charaterisation” becomes “Characterisation”) and the addition of “were used” to an extremely long nominal group complex (comprising 47 lexical tokens) to make a complete clause. In addition, three references were added, two of which cited the author, and these were then placed into existing citations four times. As such, it appears that the author substantially resisted changing the original submission, opting instead to bolster claims with increased self-citation and correcting two minor lexicogrammatical issues. Such a strategy was not successful.

Submission of the revised RA including a formal acknowledgement with respect to reviewer feedback and clearly explained amendments were incorporated in the ARR. The author justified all changes in an exemplary manner. By this I mean that the dialogue between reviewers, editor and author contributed towards the social purpose of the overarching discourse event instead of jeopardising it with potential tenor discord. The editor then soundly examined the author’s revision and response to reviewers against the RRs before deciding on a second iteration of the macro stage of Evaluation, considering the nature of revisions addressed. At this successive major point of contention, only a single reviewer was approached, namely reviewer 2, for further evaluation of the revised manuscript. This process was expected

to indicate remaining underlying weaknesses that might serve to develop the message conveyed in the context of publishing the paper. Reviewer 2 countered the revised manuscript with a recommendation for major revision a second time. This decision is supplemented with a comprehensive report on the revised manuscript, probing the justifications and explanations provided by the author.

Reviewer 2 rated the revised RA as weak, from the field specific perspective, noting specifically that its interpretation is not warranted by data. The feedback and comments reveal issues related to the revised discussion of results, the justification of results, and contradicting data and literature. The report highlights inaccurate statements in the revised RA providing an explanation of results and discussions pertaining to the existing literature and the inclusion of corresponding citations. This comment was based on grounds that the specific citation included argues otherwise, clearly indicating that the author's response fails to explain the fact. The reviewer probed the context of discussion further by identifying inaccurate terminology and confirming it with respect to its meaning, relevance and application. The reviewer communicated a detailed rationalisation and perspective, which stressed an irrelevant discussion resulting from this technical error. The final concern was reflected in the extracted segment below from the report:

“...In addition to failing to provide a convincing argument to support the statement that , the author provides no reason for the ...”

This comment directly relates to the issue of discussion and justification of results. The author had not addressed the issue from the perspective of a reader and needed to critically defend results in the manuscript to this effect, coupled with substantial reasoning. The reviewer summarised the author's observation with respect to the above phenomena as valuable and that it was expected based on the reasoning, however reinstating the lack of credibility from the perspectives pointed out above. The RR (B) (IV), which was strongly skewed towards the weaknesses that posed specific risks from the perspective of the field, was then communicated to the author with an Editorial Decision of conditional acceptance subject to a second major revision.

9. Re-iteration of peer review process	n/a	Reviewer invitation letter with article title and abstract Acceptance to review
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10. Outcome of peer review	RR (B) (IV)	Comments to editor/author Reviewer thank you letter
11. Editorial Decision	n/a	Letter confirming conditional acceptance subject to Major Revision
12. Revised submission	RA Revision 2 (A) (IV) ARR (C) (II)	Cover letter to Editor
13. Evaluation of revised submission	n/a	n/a

Table 4.6: Case 2 – Second iteration of Evaluation and Conclusion macro stages

The author responded with a formal acknowledgement again, persevering with the dialogue in view of the comments and suggestions on the content of the rubber RA. Details of corrections and amendments were listed clearly in the “ARR” (C) (II) (Table 4.7). The reviewer’s suggestion on the lack of justification of claims was addressed with specific statements being deleted and replaced with another point of view to strengthen the claim, relating evidence and corresponding grounds in accord with published literature. Further to this, comments on inaccurate terminology were heeded by rewording the context of discussion to integrate aspects of relevance, meaning and application, in a clear and sequential manner with reference to both results and previously published findings. Successively, the author has amended the text segment with regards to the reviewer’s criticism on the irrelevant discussion, by strengthening the nature of the argument and underlying reasoning that were omitted in the previous revision. The author improved the overall conclusion for the rubber RA with regards to the discussion of both data and literature. The conclusion was reworded in accord with the reinforced claims, arguments and discussion.

Reviewer feedback	Author’s justification
Justification and correction of contrasting data and literature presented	The author deletes the contradicting section highlighted and re-describes the phenomenon, interpreting the data presented in the light of literature cited as well as further justifying the rationale on specific interpretation of results
Reviewer highlights inaccurate terminology as well as an irrelevant discussion and misinterpretation of data leading to inaccurate statements.	Clarification and amendments to the inaccurate terminology, discussion and interpretation of data. Author includes improved discussion on this aspect and

	justifies interpretation of results in accordance with reviewers feedback.
Lacking justification of claims and results due to issues with specificity in writing	Subsequent amendments and improvements were incorporated to the revised submission, including specific rationale towards interpretation of results as well as rewording the conclusion to indicate the value and impact of publication in the light of research objectives and findings reported.

Table 4.7: Case 2 – Summary of author’s response to 2nd iteration of macro stages Evaluation and Conclusion comprising author’s response to reviewers, (C)(II)

RA Revision 2 is therefore more substantial in its lexicogrammatical realisation, though not until the Results & Discussion section in the final third of the paper. Specifically, there was substantial additional material in the section on “Basic Physical Properties,” where the passive mental interpersonal metaphor “it is strongly believed” with a single projected clausal claim was replaced with three clause complexes which have direct modality (“would suggest,” “would still be sufficient to preclude,” “could blend”) and an it-cleft serving the same purpose (“It is also highly unlikely that...”). Claims here were therefore more extensive in number, but also modalised in terms of probability in more acceptable academic fashion. The opposite change took place in the next edit, where the bald claim (“had acted”) was replaced with a passivised mental clause (“is to be expected”) on claims of tensile strength, with the change serving to explicate the phenomenon. The final change in this section altered the properties of a circumstantial adjunct of cause (“due to”), correcting the relationship between a decrease in tensile strength and the reason behind it.

Within the section on “Electromagnetic Interferences Shielding Effectiveness,” there was a Beneficiary (“can be achieved for X”) which was given a more general reference, where a nominal group headed by a definite article is changed to “this kind of TPV system,” with a later addition specifying which kind using “i.e.”. Interestingly, here the passive interpersonal metaphor returned, with “It is strongly believed” bringing back the claim deleted earlier, with some increased graduation (“a very high concentration”). The “Morphological Study” added a classifier to create “continuous PP phases,” and the Conclusion shifted a nominal group head by removing “technique” from “The thermal mechanical mixing technique,” thus ensuring proper specification of terms; the final change was of the same sort, but with an emphatic circumstance of location “particularly in those continuous PP phases.” In sum, then, there was still a quite limited amount of revision taking place here; however, it served several purposes

in being more substantive: the scientific corrections were indeed important, but I would argue that equally important was engaging in the dialogue with the Reviewer in such a way as to ensure these changes demonstrated sufficient acquiescence in the process of revision as guided by the roles in the discourse event.

The RA Revision 2 (A)(IV) and comprehensive feedback provided by the author were accepted for publication upon the evaluation and decree of both Reviewer 2 and the journal editor upon a **third** iteration of the macro stage of Evaluation. The author's perseverance is noteworthy in view of the second revision, whereby previously amended segments of the rubber RA were further improved and reworded based on feedback and suggestions by the reviewer. The author demonstrated mindfulness in responding to each comment, with reasoning behind adhering or justifying choices of action throughout communication with the editor and reviewers. The dialogue between participants of the discourse event demonstrates that even with issues in the field, tenor and mode of the central artefact, understanding of how to negotiate these features in the supporting stage documents led to the ultimate success of the macro generic goals. This author thus successfully addressed the risks semantically mapped onto the field specific, technical elements of Scientific English, including linguistic features and (multi-)modal concerns while also maintaining proper tenor across the various negotiations taking place.

14. Re-iteration of peer review process	n/a	Reviewer invitation letter with article title and abstract Acceptance to review
15. Outcome of review	RR (B) (V)	Comments to editor/author Reviewer thank you letter
16. Editorial Decision	n/a	Letter confirming unconditional /final acceptance (k)
17. Editorial Stages towards Publication	Published RA (A) (V)	Author's consent to publish, based on proofs (l)

Table 4.8: Case 2 – circuitous route towards publication, 3rd iteration of Macro stages Evaluation and Conclusion

Figure 4.1 below characterises the risks that exist within the major points of contention throughout the overarching discourse event. Upon submission of the original rubber RA, acknowledgement and acceptance for consideration of publication from the Editor marks the first requirement which signposts successful progress along the discourse pathway. Outcomes

of the review iterations and Editorial Decisions on the rubber RA also represent elements of risks and success. Reviewers and editors are on the decision making end with regards to final acceptance in each iteration of the review process; however, the author's reaction and choices in pursuing both revised submission and response to reviewers in a comprehensive manner have a significant impact on the evaluation and assessment stage that is crucial to the fate of the rubber RA.

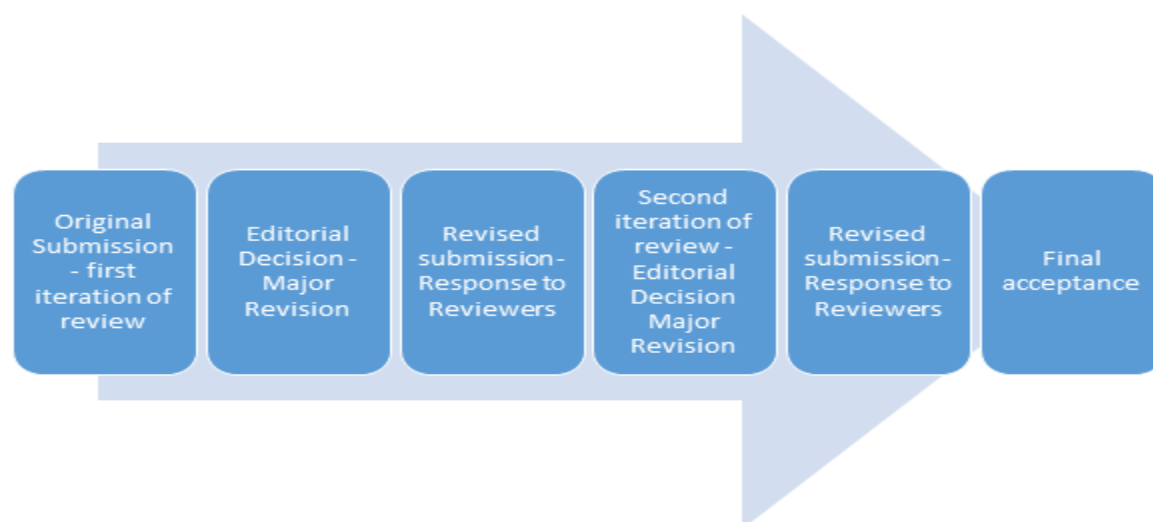


Figure 4.1: Points of contention in overarching RA publication discourse event

4.6 Case Study 3 – Rejected Rubber RA

The third and final case entails a rubber RA that led to rejection. The progression of the macro stages of Initiation and Evaluation, supplemented by editorial correspondences, are outlined in Table 4.9, below. Submission of the original rubber RA addressed to the editor marked the beginning of the overarching discourse event, manifested in language by the rubber RA submission genre (A) (I) and micro genre (a). Despite moving onto the following micro stage of acknowledgement from the Editor (b), this RA was not approved for consideration of publication at this stage. Due to the technical check failure listed as the 3rd micro stage in transition, realised and manifested in language via micro genre (c), a letter was sent to the author requesting rectifications on the inconsistency of the rubber RA title in the submission and cover letter to the Editor, as well as missing information with respect to specification of keywords after the abstract and assigning a corresponding author providing contact details. The 4th micro stage marks resubmission of the RA (A)(II) with incorporated amendments as requested by the editor, followed by approval from the Editor in a letter (d) confirming acceptance for consideration of publication prior to the review process.

The peer review process was initiated as the 5th micro stage, manifested in language by the correspondences between editor and reviewers, inclusive of reviewer invitations (e), acceptance(f)(i), decline(f)(ii), reminders(f)(iii) to assigned reviewers and unininvitation(f)(iv) upon completed reviews. Following this stage, outcome of the peer review process was realised by the RRs (B) (I), (II) (III) and (IV), and reviewers' comments to editor and author (g) as well as reviewer thank-you letters (h). The analysis of meta-linguistic characteristics of RRs, comments to the editor and author, as well as the RA itself, reveal limitations and risks that can lead to an editorial decision of outright rejection.

This submission was reviewed by four Editorial Board Members of JRR, who were field experts in Chemistry and Technology. With regards to contextual sociolinguistic aspects of participants, the author was a Malaysian researcher, an L2 scientist, reviewers 1 and 3 were L2 scientists as well, while reviewers 2 and 4 were L1 scientists. RRs (B) (I), (II), (III) and (IV) were supplemented further with specific comments to both Editor and the author (e), followed by an acknowledgment (f) from the Editor. Feedback in the RRs and comments to the Editor and author highlighted concerns on specific risks affecting the failed social purpose and ultimate goal of publication.

Micro stage	Central Text	Editorial Correspondence
1. Submission	Rubber RA Submission (A)(I)	Cover letter to Editor (a)
2. Acknowledgement	n/a	Letter confirming submission received (b)
3. Technical Check Failure (pending editor approval)	n/a	Letter regarding technical check failure/rectifications (c)
4. Resubmission/Editor Approval	RA Resubmission (A) (II)	Letter confirming acceptance for consideration of publication (d)
5. Peer review Process initiation and follow up	n/a	Reviewer invitation letter (e) Reviewer Acceptance, followed by acknowledgement (f) (i) Reviewer declines invitation (f) (ii) Reviewer Reminder (f) (iii)

		Reviewer uninvited (f) (iv)
6. Peer review process outcome	RRs (B) (I), (II), (III) and (IV)	Comments to editor/author (g) Reviewer thank you letter (h)
7. Editorial Decision	n/a	Letter with summary of decision and RRs confirming Rejection (i)

Table 4.9: Case 3 – Macro stages of Submission, Evaluation and Conclusion towards Rejection

Reviewers' perspectives were mostly skewed towards the nature of language errors and weaknesses, with minor discrepancies in opinions in the light of detail and specificity of their individual comments. Issues pertaining to technical field elements were sufficiently large. This posed threats towards success in gaining acceptance for publication, requiring entire paragraphs to be rewritten. The first issue was that of inadequate technical and experimental methods as well as insufficient supporting experimental material and data, rendering a potential problems towards justification of the study presented. Further, the statistical treatment employed was interpreted as erroneous, a modal concern, though one which went beyond the presentation of data and into the underlying disconnect of semantic values as follows: undefined scientific taxonomies and misleading terminologies were an alarming concern owing to reader confusion, coupled with inconsistent and inaccurate scientific units, abbreviations and formulae presented in both figures and text. In addition to this, inappropriate units also rendered the figures misleading and provided no basis for the discussion of results, leading to problems associated with the justification of results as well as claims made in the light of strengthening research findings. Missing information in the context of observing transparency in writing for the purposes of journal publication is directly correlated with the feature of specificity in writing. Reviewers strongly recommended the omission of unsupported data or discussion. Following this were the issues of incomprehensive and inaccurate literature references, as well as unrelated objectives and findings owing to poor experimentation, poor results and insufficient data to provide a coherent flow. Further, discussion of unrepresented data cannot be assessed, hence, due to the omission of essential data, linearity is not assessable. The paper therefore gave the impression of both lack of field knowledge and inadequate grasp of the mode.

Ultimately, inaccurate statements contributed to coherence issues which were associated with the style and presentation of the paper, resulting in an overall incoherent arrangement affecting the flow and understanding of information. The issue of redundant information, derived from a lengthy theoretical analysis which should have been omitted, indicated a lack of mastery of the fundamental RA genre itself. Following this, the writing style was a significant threat that contributed toward the failure of the overarching discourse event, being too speculative with inaccurate generalisations while lacking clarity in writing. This aspect was additionally flawed by careless mistakes and salient grammatical errors including plurality, tenses, prepositions and superfluous word choices.

Every section of the rubber RA was flawed from the structural generic perspective. Beginning with the title of the article, reviewers stated that it was worded in a misleading manner while not adequately descriptive of the study. The abstract was deemed too generalised. The methodology described was not reproducible and incomprehensibly described with major weaknesses owing to the shortcomings of the experimental set up, undefined parameters of the study, and the viability of equations in the theoretical models were described as simply wrong, leading to inaccurate interpretation of results.

Errors were also persistent in the representation of illustrations, unacceptable for consideration of publication. RRs indicated that major improvements were needed to redraw and reorganise data presented, which were uncorrelated with captions and axis titles. The results were not optimised and primarily misleading with specific figures presenting repetitive results to be omitted while additional figures should be included to reveal a stronger interpretation of results. Illustrations lacked details in description resulting in poor depth and context of discussion, indicated specifically by a muddled discussion missing the actual point and argument in the context of the present case. The conclusion subsequently included summarisation of previous published works rather than focusing on the context of the present study. Weak literature references were weighed down further with formatting issues not presented in accordance with the standardised citation style and recognised abbreviations for journal titles.

4.7 Summary

The multiple case studies here serve to draw attention to success (and lack thereof) in scientific writing and rubber RA publication in a Malaysian context, with significant emphasis on how novice researchers may view the process of achieving publication via connecting with

readers at various stages of publication. The corroboration of data analysis in the context of this research is aimed at an overall interpretation on multiple perspectives from the participants and processes involved, so that these writers could have a better understanding of the various readers of their work. Achieving a balance of awareness and understanding from the perspectives of registerial variables mapped onto language characteristics as indicated particularly in the review process allows assessment of which variables create risk in the social purpose of the rubber RA publication discourse event. The analysis of both circuitous and unproblematic routes towards publication, contrasted against the third case of a rejected rubber RA, reveals the significance of many types of language considerations, most particularly the importance of negotiating tenor relationships at various macro-generic stages.

Success or failure is therefore often due to understanding tenor relations not just between the writer and the audience of the RA, but also of the writer and the editor, and the writer and reviewers. Knowledge of interpersonal resources are thus crucial at all required stages of the discourse event (if it is to be successful): from the point of submission, to the editorial decision and peer review, towards revision prior to acceptance for consideration of publication. At the latter junctures, each case varied significantly in view of considerations and reactions, resulting in differing levels of success. The power differences among participants, in the light of their roles and reactions manifested in language, are a linguistic measure of the discourse event boundaries and expectations towards a favourable outcome of the social purpose. Novice researchers must understand this with regards to the threats and risks pertinent to success of the RA publication should they wish to reach their ultimate audience, the specialised readers of the journal.

CHAPTER 5

MACRO GENRE PARAMETERS

5.1 Introduction

This chapter sketches out the rubber RA publication macro genre, demonstrating that it comprises macro stages (Figure 5.1) with obligatory and optional elements in sequence. Each of the macro stages involve different combinations of interlocutors, i.e. authors, editors and reviewers, partaking in editorial correspondences and relevant genres which contribute to mapping the macro genre. The typical macro genre pattern and its variations as part of this macro genre analysis emerges from a build-up of exchanges between interlocutors during the progression of rubber RAs along the publication discourse event pathway. All macro and micro stages (obligatory and optional elements) are hereafter capitalised throughout the discussion. The macro genre analysis integrates macro stages of Initiation (beginning), Evaluation (middle) and Conclusion (end) in the overarching discourse event. Further, this analysis will confirm the sequence (where in each stage) and iteration (how often) of both, obligatory and optional elements as they occur in the dataset and from my insider perspective as an editor.

Part of the problem for authors is the common assumption that an RA is a single, finished text, instead of the culmination of a largely dialogic process which itself comprises a macro genre (as per Martin 1995 and 1997) and from Bakhtin's (1981) approach to dialogism further developed in Martin and White (2005). Here, the point is made that language behaviour which is socially important can take place in a sustained way across a range of genres. Figure 5.1 sketches out boundaries of the rubber RA publication macro genre, in reference to the subsequent discussion on findings comprising macro stages, micro stages (which include obligatory and optional elements), realisation statements (which point to genres), points of contention (in red) and the various interlocutors for each of the macro stages of Initiation, Evaluation and Conclusion. This chapter thus argues that the rubber RA publication macro genre is fundamentally a social event where discourse knowledge and skills will help authors navigate the process, with a focus on tying obligatory elements to success in the genre and a discussion on crucial areas of failure in the latter part of the chapter.

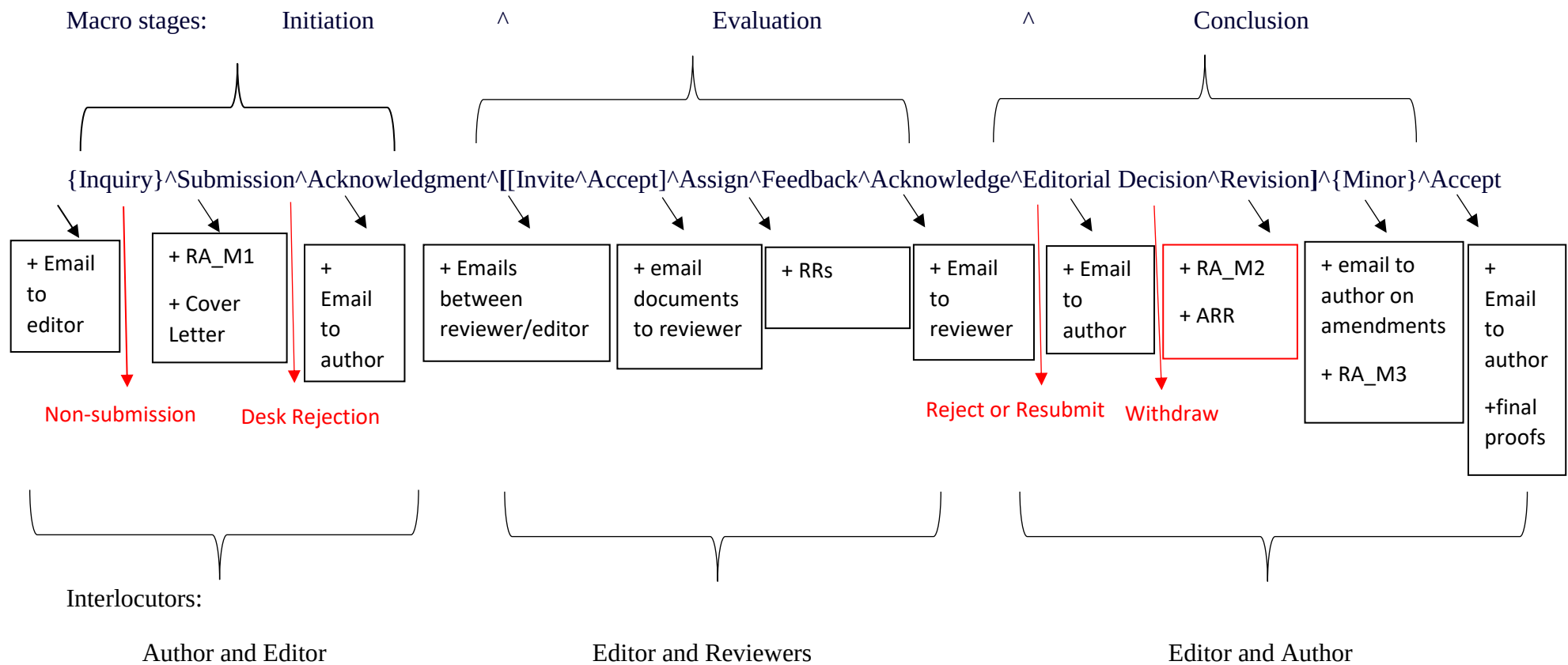


Figure 5.1: Macro genre stages, obligatory and optional elements, realisation statements, potential threats and interlocutors

*Key: RA_M1/M2/M3 – research article manuscripts 1, 2 and 3; {optional elements}; obligatory^elements; [iterative elements];
potential threats;

+Realisation statements

The obligatory elements for each macro stage reflect the typical macro genre pattern comprising core genres which contribute to achieving the overall goal of seeing a quality publication to print. In that regard, a particular set of obligatory elements in each macro stage represents the typical genre pattern for rubber RA publication. The rubber RA publication macro genre as a result of trends within the dataset also includes optional elements in sequence and respective iterations of obligatory elements within each macro stage. The typical macro genre pattern for each macro stage of the rubber RA publication macro genre (Figure 5.2), precedes an exhaustive account on variations of this macro genre pattern within the dataset. This chapter will discuss the notion of a typical macro genre pattern which consists of obligatory elements in each macro stage leading to their respective contextual configurations (CC) first. Ensuing this is a discussion on variations of the macro genre pattern that occur within the dataset. Both the dataset and my experience as an editor confirm the failure of the central artefact to evolve in a way acceptable to all of the interlocutors which threatens the genre (or else the central artefact was not acceptable in the first place). Resultantly, some variations of the typical macro genre pattern reveal points of contention leading to possible difficulties sometimes resulting in outright failure of the discourse event. Ultimately, the emphasis is to preserve the macro generic goal of only seeing a quality publication to print.

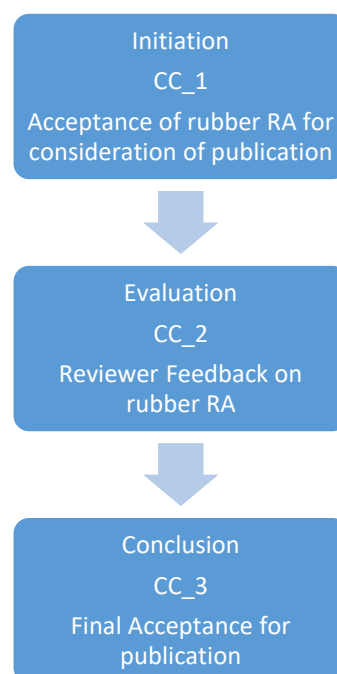


Figure 5.2: Macro stages of the rubber RA publication macro genre

As an outline of results and discussion within this chapter, section 5.2 focuses on the CC for the macro stages of Initiation, Evaluation and Conclusion, respectively. Definitions of each CC represent the goals of each macro stage (i.e. CC_1, CC_2 and CC_3) which then contribute towards achieving the overall social purpose of seeing a quality publication to print. With a clear definition of the CCs for each macro stage, section 5.3 proceeds to discuss the notion of a typical macro genre pattern for these macro stages. This includes the introduction of obligatory elements comprising core genres in each macro stage in sequence that leads to the CC of a particular stage while eventually contributing to the overall social purpose and macro generic goal.

Section 5.4 describes variations to the typical macro genre pattern in reference to occurrences within the data set as well as my insider perspective to reveal optional and obligatory elements in each stage that in some cases lead to possible points of contention and difficulties in realising the ultimate social purpose. Sections 5.5, 5.6 and 5.7 illustrate the pathway trends of each macro stage as a result of combining occurrences of both obligatory and optional elements based on a specific sequence and subsequent iterations of each macro generic stage reflecting an entirety of the publishing process as a discourse event. The analysis reiterates and derives registerial variables of field, tenor and mode of discourse pertaining to each macro stage of the macro genre, and consequently the CCs to represent specific goals for each macro stage. Obligatory and optional elements as a result form a specific sequence of where they must (core genres) and can (variations) occur, respectively. This then leads to the final stage of the analysis which continues to describe the case specific iterations of how often these elements can and do occur, in distinctly mapping out the macro genre.

Section 5.8 draws a summary of the results and relevant discussion within this chapter, to clearly define boundaries of the rubber RA publication macro genre accordingly. Each macro generic stage, together with points of contention along their pathways contribute towards the creation and expansion of new knowledge in the domain of scientific publishing from an SFL perspective. The relevance of context, genre and text structure associates the notion of unity in recognising the macro genre as a whole towards accounting for a comprehensive macro generic structure. Understanding and awareness of the macro generic stages together with obligatory and optional elements as part of a robust system will be an advantage to authors, as members of the rubber RA publication discourse community comprising editors and reviewers.

5.2 Contextual Configurations (CCs) of the Macro genre

A description of the relevant CCs reveals the goals of each macro stage (i.e. CC_1 for Initiation; CC_2 for Evaluation; CC_3 for Conclusion) that indicate meanings in relation to the nature of processes and serve to clearly define the obligatory elements and core genres that contribute towards the macro generic goal. The idea of context, genre and its structure potential define the boundaries of the rubber RA publication macro genre. The notion of social experience involves both understanding and participation in the macro genre, which indirectly contributes towards achieving the social purpose and goal of seeing a quality publication to print. This aspect is indicative of a scientist's experience as an author, particularly, to realise the significance of obligatory elements and variations which are subsequently introduced in the form of optional elements that comprise the macro genre.

The following subsections (5.2.1, 5.2.2 and 5.2.3) comprise an analysis of registerial variables to determine CCs for the macro generic stages of Initiation, Evaluation and Conclusion. Field, tenor and mode of discourse for each of these macro stages represent language in the context of situation, at the level of register with respect to the context of culture denoting genre (Martin and Rose 2007). Aspects of field, tenor and mode associate both obligatory elements and their realisations that point to the corresponding core genres throughout the discourse event, and in combination with participant roles these contribute and reflect the CCs for each macro generic stage.

Field of discourse with reference to the topic represents how language functions to make meaning in a socio-cultural context (Martin and Rose 2009). Martin particularly views genre as “a system of social processes” and this is first brought into perspective by introduction of obligatory elements in each stage that reflect a typical genre pattern. Considering the rubber RA publication macro genre in its entirety, the field of discourse involves a rubber RA as the central text, which evolves along the publishing process from the point of submission (RA_M1) towards an editorial decision of final acceptance (RA_M2/M3), upon peer review and revision accordingly (Figure 5.1). The rubber RA progresses through the discourse event in view of consideration of publication. It does this by achieving an initial editorial acknowledgment and a conditional acceptance subject to revision, in view of fulfilling the macro generic goal of seeing a quality publication to print.

The notion of discourse community is noteworthy in the context of this research, as distinct analyses of peer review reports, ARRs and rubber RAs submitted to the *Journal of Rubber Research* (JRR) involve scientific discourse and communication among three groups, namely:

- i) Editorial Board members/reviewers
- ii) Authors
- iii) Journal editors

As the rubber RA publication macro genre and its macro stages are institutionalised in nature, power differences exist between these participants. Awareness and understanding of the dialogic nature of the publishing process as a macro genre is key, considering a common perception of authors holding the least power in comparison with editors and reviewers. The power differences among participants, in the light of their roles and reactions manifested in language are a linguistic measure of the discourse event boundaries and expectations towards a favourable outcome of the social purpose. As the central text evolves in its form as a submission and revised submission towards acceptance for publication, authors have the power to include rationale and negotiate justifications in the context of responding to reviewers. Each of the micro genres reflect a different tenor relationship of sorts, and it is in fact the variations which are significant.

The case study findings (Chapter 4, section 4.5) demonstrate the significance of mastering tenor relations, in view of limited revision taking place throughout a circuitous pathway towards acceptance. The author of this second case study successfully addressed the risks semantically mapped onto the field specific, technical metalinguistic issues of Scientific English, including linguistic features and (multi-)modal concerns while also maintaining proper tenor across the various negotiations taking place. Upon submission of the original rubber RA, acknowledgement and acceptance for consideration of publication from the editor marks the first requirement which signposts successful progress along the discourse pathway. Outcomes of the review iterations and editorial decisions on the rubber RA also represent elements of risks and success. Apart from the scientific corrections by the author, equally important is engaging in the dialogue with the reviewers and editor in such a way as to ensure these changes demonstrate sufficient engagement in the process of revision as guided by the roles in the discourse event.

The dialogue between participants of the discourse event demonstrates that even with issues in the field, tenor and mode of the central artefact, understanding of how to negotiate these features in the supporting stage documents led to the ultimate success of the macro generic goals. Reviewers and editors are on the decision making end with regards to final acceptance in each iteration of the review process. However, the author's reaction and choices in pursuing both revised RA and response to reviewers in a comprehensive manner have a significant impact on the Re-evaluation stage that is crucial to the fate of the rubber RA. Therefore, a remarkable implication in the context of success or failure with regards to the discourse event is realisation of tenor relations with regards to communication and written dialogue in the context of roles and relationships between participants throughout macro stages within the discourse event, if it is successful.

In analysing the mode of discourse, one of three considerations include the role of language which is largely constitutive. The second concern is that of process sharing which involves text creation and it's unfolding in reference to the notions of logogenesis (Halliday and Matthiessen 2004) and dialogism (Bakhtin 1981). An important consideration is thus the notion of bibliogenesis (Charlotte and Irwin forthcoming) with reference to the evolving rubber RA in its iterations as original and revised submissions.

Thirdly, the channel of communication is a factor referring to the modality being visual or aural, relates to the terms graphic and phonic (Hasan 1978, 1979). Further, Halliday (2007) proposes features of scientific discourse, perceiving it as an evolution to address the requirements of scientific methodology, arguments and theory. Halliday's features of scientific discourse denote registerial variables of the rubber RA. He deems the language of science, i.e. Scientific English, is suited for experts, while seeming problematic and perplexing for novice learners who are required to master scientific concepts and principles. A rubber RA represents the central text that contributes towards the written dialogue in the form of RRs and ARRs throughout the publication macro genre.

In that regard, Halliday's work discussed in Chapter 2 (section 2.11) confirms that scientific discourse is subject to the grammar of a scientific clause where meaning is made (Halliday 2007, p.140). This has a significant implication in underpinning the SFL theory and its application in scientific discourse within the context of my research. Noting that complications are due to the intricate relationship between technical terms, the following specific features illustrate the characteristics of scientific English (Halliday 2007, p.162):

- (1) interlocking definitions
- (2) technical taxonomies
- (3) special expressions
- (4) lexical density
- (5) syntactic ambiguity
- (6) grammatical metaphor (GM)
- (7) semantic discontinuity

These features are representative of the register of discourse and contribute to achieving the social purpose and macro generic goal of rubber RA publication. To reiterate, the goal for the overarching discourse event is seeing a quality publication to print through specific considerations in the macro stages of Initiation, Evaluation and Conclusion. This discussion now leads us towards CC_1, CC_2 and CC_3 for the respective macro generic stages.

5.2.1 Towards CC_1 for the Macro Stage of Initiation

Submission is the first obligatory element for the macro stage of Initiation and the overarching discourse event. Its realisation is in the form of a rubber RA and cover letter to the journal office or editor. Following this, assessment of the rubber RA in the form of a technical check by the editor and an approval for consideration of publication by the Editor in Chief then results in an editorial acknowledgement. Obligatory elements that must occur during the macro generic stage of Initiation are Submission of the rubber RA, and upon assessment in the form of a technical check by the editor the RA proceeds to achieve the element of Acknowledgement. The editorial acknowledgement is in the form of a letter. At this point the rubber RA is accepted for consideration of publication and the event progresses to the next macro stage.

The interlocutors for Initiation are the corresponding author and editor. As the rubber RA publication macro genre and its macro stages are institutionalised in nature, power differences exist between these participants. A hierarchic distinction within this stage confirms that the editor exercises a greater degree of control over the author. In the context of the present dataset, considering JRR is published by the Malaysian Rubber Board, there exists potential internal

contributions from scientists within the organisation. This situation reduces the social distance, bringing it to a minimal with a greater degree of familiarity between the author and editor. While there is essential formality, there may be slight differences in communication style.

In analysing the mode of discourse for this macro stage of Initiation, the discourse events progress via the texts and at this point the texts does not involve process sharing, unless there is more than one author. The channel of discourse is visual and for that reason graphic, with a combination of written text, as well as figures in the rubber RA, as the central text which resonates the features of scientific discourse, mentioned above in reference to Halliday (2007).

Acceptance of the submission (RA_M1) for consideration of publication is CC_1 for the stage of Initiation. This also reveals the social purpose and goal of this stage, involving the aspects of field, tenor and mode. Linguistic realisations of obligatory elements, together with that of participant roles contribute to CC_1 for the macro stage of Initiation. The RA_M1 progresses along the stages of Evaluation and Conclusion in view of the overall macro generic goal of seeing a quality publication to print.

5.2.2 Towards CC_2 for the Macro Stage of Evaluation

From the publication-eye view of the process, RA_M1 progresses into the macro stage of Evaluation upon gaining acceptance for consideration of publication. This directly corresponds with achieving the goal and social purpose for the macro stage of Initiation i.e. CC_1. Similarly, registerial variables in a configuration of field, tenor and mode of discourse for this stage of Evaluation serve to validate CC_2. Further analysis on the dataset reveals a set of obligatory elements in sequence, leading to the realisation of CC_2 (Section 5.3.2).

The field of discourse with respect to topic in this macro stage largely involves the obligatory element of Feedback, realising RRs on the rubber RA. A dedicated team of subject specialists consisting of Editorial Board members as well as reviewers, work together in assessing the scientific and technical content of the rubber RA. Analysis of the tenor of the discourse within the macro stage of Evaluation with respect to agent roles, power differences and social distance involves communication between reviewers and the editor as interlocutors. Social distance between them is minimal, considering an editorial decision is the outcome of reviewer feedback on strengths and weaknesses in relation to the scientific content of the rubber RA. However, power differences exist considering the impact of depth and critical assessment by a particular reviewer, which in turn will influence the editor's perspective on the rubber RA

greatly. In this regard, a RR commending acceptance of a rubber RA with evident flaws that another RR indicates may be overridden. This is based on the prerogative of both editor and Editor in Chief, considering the rubber RA has potential for significant improvement subject to major revision.

Finally, mode of discourse throughout the stage of Evaluation is written, with small potential for comments on images/tables/charts. Each reviewer submits feedback on the manuscript together with separate comments to the editor and authors. Upon receiving sufficient reviews on the rubber RA, reviewer Acknowledgement and subsequent Termination of pending assignments mark the end of the stage of Evaluation. A minimum of three reviews on an RA leads to this point.

The obligatory element of Feedback from reviewers for a particular rubber RA initiates the beginning of a formal dialogue in writing between reviewers, editor and authors. The configuration of registerial variables thus confirm that reviewer feedback on the rubber RA reveals CC_2 for the stage of Evaluation.

5.2.3 Towards CC_3 for the Macro Stage of Conclusion

The first obligatory element in the final macro stage of Conclusion is an Editorial Decision, which succeeds reviewer feedback on the rubber RA. This decision varies depending on inter-reviewer correlation and represents the social purpose of this macro stage, which is ultimately in the form of a conditional or unconditional acceptance in view of a successful genre pattern, otherwise a rejection or resubmission. Where there exists significant differences in reviewer opinions on a manuscript, the Editorial Decision relies on the final jurisdiction of the Editor in Chief. The Editor then conveys the outcome of the peer review process in the form of an editorial decision letter (email) to the author, inclusive of RRs, feedback and recommendations. Conditional acceptance of the rubber RA subject to either major or minor revisions allow for longer or shorter revision periods, accordingly. As the Editorial Decision on an RA is final, understanding the dialogic nature of the path towards publication helps an author navigate the journey and potentially influence the fate of a particular rubber RA.

From a text-eye perspective, only rubber RA's with a conditional acceptance continue to progress along the discourse event pathway. This is further reliant on the author deciding to pursue revision of the rubber RA in view of feedback from both reviewers and the Editor. Field of discourse in the macro stage of Conclusion involves the author submitting a Revision of the

rubber RA. The tenor of discourse is a continuation of the formal dialogue in writing, in responding to reviewers and the editor. The author should include acknowledgement of feedback from reviewers, along with a comprehensive listing of reasoning, justification and description of amendments incorporated in the revision. This dialogic nature of the publishing process generally takes place between author and editor as interlocutors for this macro stage. To integrate the dialogic association between core genres of RRs and authors' responses to reviewers, Chapter 6 includes a comprehensive discussion on the semantic coding analysis of metalinguistic issues in scientific writing for rubber RA publication.

Mode of discourse is similar to that of the Initiation macro stage, as revision of a rubber RA is both written and involves a formal structure similar to that of submission. Authors however can only pursue this dialogic discourse as a result of the peer review process by means of response to reviewers, subject to an editorial decision of conditional acceptance. Process sharing complements ARR in writing, where authors acknowledge reviewer comments and provide their rationale accordingly. The notion of process sharing takes place in the context of the rubber RA and its unfolding (RA_M2, Figure 5.1), as introduced in Sections 5.2.1 and 5.2.2 above. Although subsequent feedback from the author in the macro stage of Conclusion is in the form of a written response, further communication involves scientific technicalities, requiring further justification or clarification by the author in the course of Revision and ARR. This discourse exchange gives rise to the notion of process sharing, as part of text creation and its unfolding upon revision of the rubber RA. Therefore, CC_3 for the macro stage of Conclusion is typically an unconditional final Acceptance of the rubber RA for publication, in line with the ultimate goal for the overarching discourse event and rubber RA publication macro genre, to see a quality publication to print.

5.3 Typical Macro Genre Pattern

The typical rubber RA publication macro genre pattern corresponds to the parameters of CC_1, CC_2 and CC_3 for each macro stage. Figure 5.2 above signposts these macro stages and their corresponding CCs, while contributing to the discourse event as a whole. The information listing serves as a basis for the following discussion of each macro stage and their obligatory elements. Further, CC_1, CC_2 and CC_3 reveal the social purpose and goal of each macro stage.

Progression of manuscript pathways in the dataset and roles of corresponding participants involve specific obligatory elements in the macro stages to achieve the respective CCs. Occurrence of these obligatory elements in sequence during each stage defines the typical genre pattern. In this regard, the following sections will indicate and define the context of each obligatory element within the macro stages of Initiation, Evaluation and Conclusion. Realisations (core genres and texts) of each obligatory element (Figure 5.1) and how they correspond to a dialogic nature allows for a clear understanding among authors, as crucial participants in the discourse event. Awareness on the part of the author holds prospective advantages in achieving publication of a rubber RA.

5.3.1 Obligatory Elements within the Macro Stage of Initiation

With a focus on the typical genre pattern for the macro stage of Initiation, I will only discuss the obligatory elements in sequence here and introduce optional elements later (section 5.5). The process begins with Submission, which is the first obligatory element when authors upload the core genres RA_M1 and a cover letter onto the journal's online portal. An assessment by the editor, in the form of a technical check on the RA_M1 follows. Upon completion of the technical check, an editorial acknowledgement letter from the editor realises the second and final obligatory element of Acknowledgement. Figure 5.3 configures the typical genre pattern for this stage of Initiation, reflecting obligatory elements, realisation statements and interlocutors.

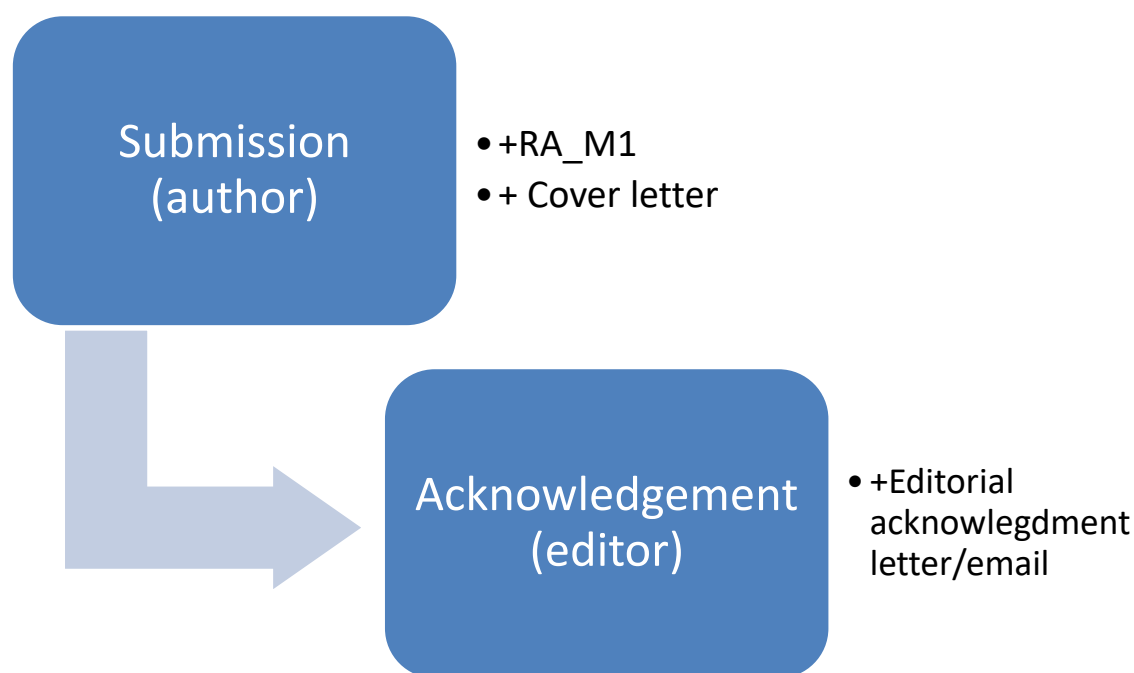


Figure 5.3: Obligatory elements, interlocutors and realisation statements within the macro stage of Initiation

The progression along the macro gene pathway includes the core genres as realisations that represent obligatory elements and participant roles as shown in Figure 5.3. Specifically, the RA_M1 and cover letter realise the Submission micro stage, and the editorial acknowledgement letter (or email) realises the Acknowledgement micro stage. The typical genre pattern in view of obligatory elements and realisation statements for the macro stage of Initiation compliments the progression of rubber RAs within the dataset as well as submissions for consideration of publication to a peer reviewed journal. Authors will first benefit in understanding the nature of this stage, which subsequently allows for awareness on the significance of an editorial acknowledgement letter (email). The latter realisation confirms CC_1 in view of acceptance of the rubber RA for consideration of publication in a particular journal. The obligatory element of Acknowledgement is thus essential for progression of RA_M1 into the Evaluation macro stage.

5.3.2 Obligatory Elements within the Macro Stage of Evaluation

As rubber RAs progress along the pathway for consideration of publication, the first element in this stage is Invite, in the form of reviewer invitation letters (email) to subject specialists, from the editor. The following obligatory element Accept is realised with an email from the prospective reviewer to the editor. Upon acceptance of the invitation by a reviewer,

the obligatory element of Assign involves reviewer assignment letters (email) with deadlines, a set of documents (RA_M1, RR template etc.) and subsequent reminders for submission of RRs, accordingly. Successfully assigning suitable reviewers for a rubber RA, and their acceptance to undertake the task leads to relevant and valuable feedback on scientific content and style. Realisations for the next obligatory element of Feedback are RRs and specific comments to both author and editor, from reviewers. Ideally, a comprehensive RR accounts for improvement on the structural, technical and functional aspects of the rubber RA. Upon receipt of each RR with feedback on the rubber RA, the final obligatory element Acknowledgement follows with its realisation in the form of reviewer thank you letters (email) from the editor.

The process of reviewer invitation, acceptance and assignment is often iterative in view of the need for a minimum of three reviews (this may vary for different journals, some requiring only two reviews) on RA_M1. When this requirement is met, reviewers who have yet to submit their feedback are unassigned or uninvited to review the rubber RA and thanked accordingly. The element of Feedback realises CC_2 by means of reviewer feedback on the rubber RA. Figure 5.4 delineates boundaries of the stage of Evaluation, with its obligatory elements of Assignment, Feedback, and Acknowledgement in sequence and corresponding participant roles of both Editor and reviewer as interlocutors, leading towards the goal and social purpose reflecting CC_2 for the macro stage of Evaluation.

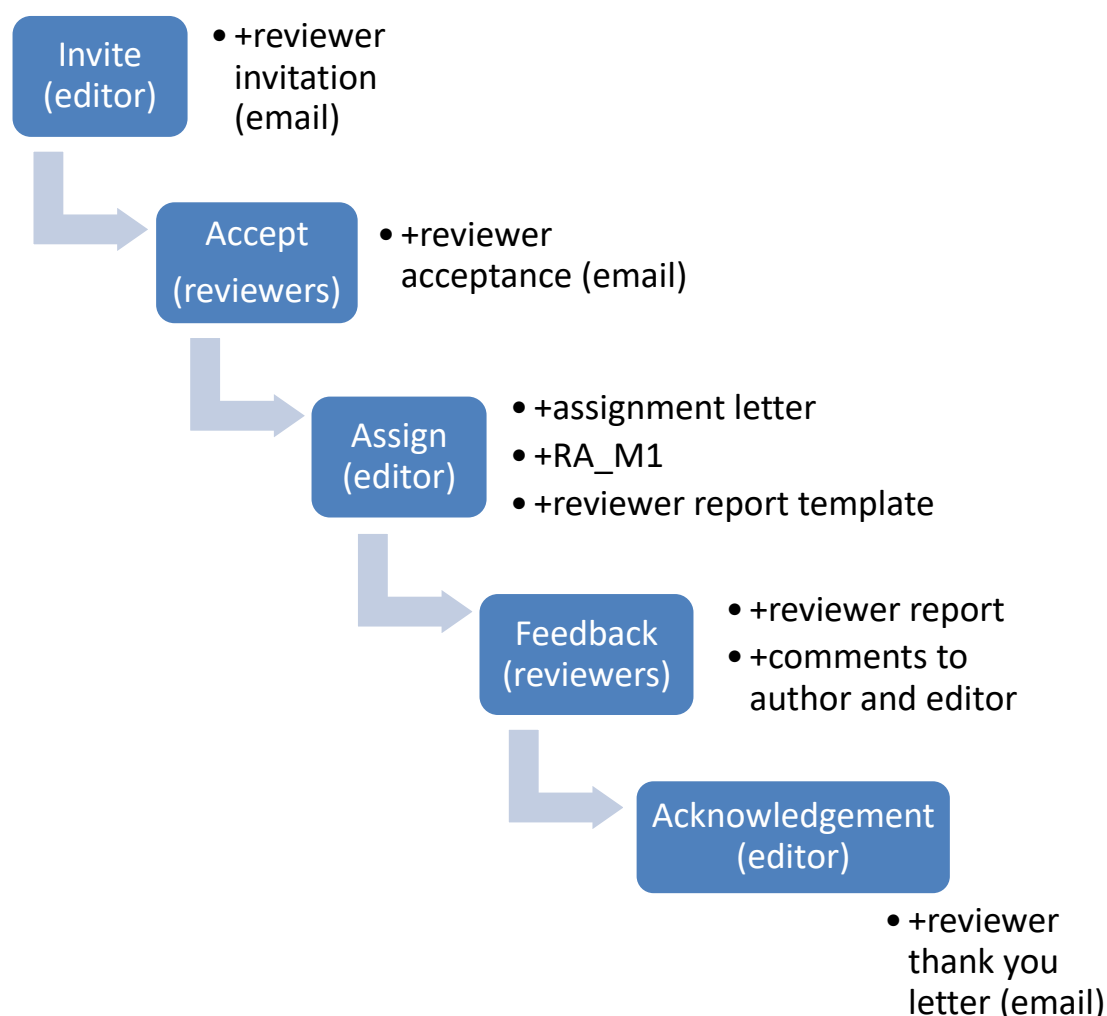


Figure 5.4: Obligatory elements, interlocutors and realisation statements within the macro stage of Evaluation

The obligatory elements above reveal core genres as parameters of the stage of Evaluation from an analysis of rubber RAs within the dataset. A comprehensive analysis of RRs within the dataset, with extensive semantic coding of structural, functional and technical metalinguistic issues supports the discussion of genre parameters on scientific writing for rubber RA publication. The semantic coding results (Chapter 6) and further juxtaposition with findings from both case studies and survey questionnaire feedback (Chapter 7) represent an effort to triangulate and conclude research findings on the macro genre analysis of scientific rubber RA publication.

5.3.3 Obligatory Elements within the Macro Stage of Conclusion

To facilitate the first obligatory element of Editorial Decision, the editor examines RRs and their comments to both editor and author, taking into account the shortcomings and strengths of the rubber RA prior to making an appropriate decision. If there exists conflicting feedback from reviewers, the editor would seek further advice from the Editor in Chief. This element is realised by an editorial decision letter, which reflects a conditional acceptance subjecting the rubber RA to either major or minor revision, otherwise rejection or resubmission. The obligatory element of Editorial Decision indicates the initial social purpose of the macro stage of Conclusion, by means of an editorial decision letter on the rubber RA which indicates its progression or termination along the macro generic pathway, respectively. Only rubber RAs with a conditional acceptance potentially progress through the stage of Conclusion towards achieving CC_3.

Instances of rubber RAs with an editorial decision of unconditional acceptance at this point indicate a success of the macro genre, in gaining final acceptance for publication. Although this does not occur within the present dataset, my insider experience confirms the possibility of an unconditional final acceptance of a rubber RA, on its first movement into this stage, with no further revision. An editorial decision of conditional acceptance of the rubber RA resembles a typical genre pattern for this stage and a potential continuation along the macro generic pathway towards publication. However, that of a rejection or resubmission (potential threat, Figure 5.1) terminates a rubber RA's progression at this stage of Evaluation and hence leads to a termination point in the genre pattern. In that respect, it is still conceivable as a non-circuitous route which does not lead to publication, yet keeping with the overall goal and social purpose of only seeing a quality publication to print (i.e., the rubber RA in question does not, for whatever reason, meet the requirements of the JRR). In view of conditional acceptance, the rubber RA only progresses within the stage of Conclusion upon occurrence of the second element of Revision. This micro stage however is highly likely as all rubber RAs within the dataset involve the element of Revision, despite the possibility of an unconditional final acceptance requiring no further revision. Its realisation involves submission of a revision, comprising both the RA_M2 and response to reviewers by the author. In that regard, the response to reviewers should comprise an acknowledgment of reviewer feedback, as well as a comprehensive account of amendments in the RA_M2, along with justifications to specific concerns by subject specialists.

Re-evaluation of RA_M2 and response to reviewers is undertaken by the editor beginning with a technical check (similar to the assessment upon Submission in the macro stage of Initiation) involving further scrutiny with regards to bibliogenesis, i.e. evolution of text, as apparent in RA_M2. The author's justifications towards preserving the dialogic nature of the rubber RA publication macro genre in the form of response to reviewers allows for a clear indication of author's views while assuring the editor on the merits of publishing the rubber RA.

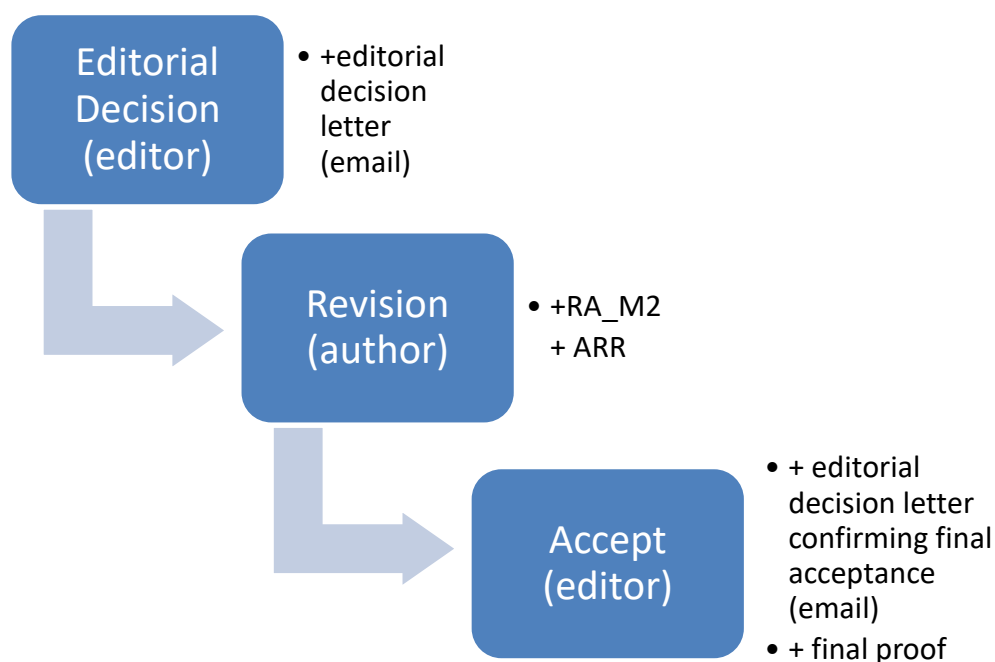


Figure 5.5: Elements, interlocutors and realisation statements within the macro stage of Conclusion

The elements and micro stages in Figure 5.5 pave a successful conclusion to the dialogic nature of the macro generic pathway towards publication and leads to the final obligatory element of Accept. Realisation of this element ensues an editorial decision letter confirming unconditional final acceptance of RA_M2 for publication. The rubber RA is then scheduled for publication in an upcoming issue of the journal prior to copyediting and typesetting. The author will receive a final proof of the rubber RA along with the consent to publish documentation. In effect, CC_3 is the final acceptance of the rubber RA for publication and it realises the goal for the stage of Conclusion in corresponding with the ultimate macro generic social purpose of seeing a quality publication to print. The complete sketch comprising 10 obligatory elements in Figure 5.1 and further expansion in Figures 5.3, 5.4 and 5.5 maps out the successful rubber RA publication macro genre pattern.

5.4 Variations to the Typical Macro Genre Pattern

In reference to the analysis of manuscript pathways within the data set, the following subsections outline the actual progression of rubber RAs, inclusive of optional elements occurring within the dataset. Further inference of optional element trends result from my insider perspective, as an editor. These optional elements are representative of occurrences in each stage, leading to or ensuing from obligatory elements along the macro generic pathway. The realisation of variations to the typical macro genre pattern also introduces potential failure and threats as the rubber RA progresses through the stages of Initiation, Evaluation and Conclusion. This involves awareness on specific points of contention having potential consequences due to non-compliance with the macro genre expectations. These elements pose a direct threat towards achieving the social purpose and ultimate goal of seeing a quality publication to print due to specific weaknesses.

A distinction between obligatory and optional elements within each stage ensures that obligatory elements essentially occur with adequate realisation (Hasan 1989). Optional elements in some instances probe and motivate the occurrence of an obligatory element, in order to circumvent challenging the CC which may lead to failure of the social purpose. Some optional elements help successive progression throughout the macro stages by means of repairing circumstances towards compliance of an obligatory element. In this regard the optional element contributes to supporting the social purpose of the corresponding macro stage as a culmination of micro stages.

A description of the relevant CCs for each macro stage above indicate meanings and define the occurrence of obligatory elements. When these meanings risk realisation, optional elements are applicable in the overarching discourse event. These elements bring into perspective the respective obligatory elements and CCs for each macro stage. The notion of social experience involves both understanding and participating in the macro genre, which indirectly contributes towards achieving the macro generic goal. Awareness of both obligatory and optional elements that comprise the macro genre is indicative of a scientist's experience as an author. The typical macro genre pattern and respective variations for each macro stage together with an exhaustive account of possible points of contention involving elements that threaten the success of the macro genre will reveal possible difficulties either in realising the social purpose or outright failure of the macro genre.

5.5 Optional Elements in the Macro Stage of Initiation

The typical genre pattern for the macro stage of Initiation is that of the occurrence of obligatory elements in sequence (Section 5.3.1). Optional elements within the macro stage of Initiation are in relation to both trends within the data set as well as an insider perspective. Realisation of the first obligatory element of Submission is marked by receipt of an original rubber RA along with a cover letter, for consideration of publication by the journal office. From an insider perspective, having dealt with the situation as Managing Editor for JRR I can confirm the optional element of Inquiry prior to Submission. This element is usually framed in the form of an email to the editor regarding technical clarifications on content (field), as well as structural (modal) concerns. However, in the context of data gathered for this research, there is a limitation due to the unavailability of emails exchanged prior to the obligatory element of Submission. As part of recommendations for future work, a comprehensive analysis focused on the optional element of Inquiry as a genre by itself is capable of revealing the whys and wherefores that could lead to either elements of Submission (obligatory) or Non-submission (threat) and further linguistic considerations for success or failure in reference to the Initiation stage of the rubber RA publication macro genre.

As an optional element, Inquiry associates with the notion of probing and motivating the occurrence of Submission. Non-Submission on the other hand directly threatens the success of the macro genre with regards to the author's decision to withdraw the idea of proceeding with Submission altogether. This element does not realise the obligatory element of Submission, hence an author exclusively avoids participation in the overarching macro genre. However, lack of data on Non-Submission is a limitation beyond both scope and considerations of the present research project. As such cases are not part of the present data set extracted from the online submission system, they will not be considered here. From an insider perspective, in most cases the author receives further information with regards to the optional element of Inquiry and proceeds with the first obligatory element of Submission. On the other hand, some instances of responding to an Inquiry associate with reading the journal's editorial guidelines for standard information on formatting and scope of the submission.

Assessment of RA_M1 by the editor leads to the second and final obligatory element in this macro stage, upon a technical check on the manuscript for scope and formatting consistency which represent both field and modal concerns. This technical check may result in a failure, leading to the optional element of re-Submission, where RA_M1 is sent back to the

author and is subject to re-assessment potentially in view of minor formatting amendments in accordance with the journal's requirements. An email from the editor confirms inadequate realisation of the obligatory element of Submission, requiring incorporation of specific amendments to allow for successive progression along the macro stage of Initiation. The strategy is valid in reference to pursuing adequate realisation of Submission through re-Submission. Based on the discretion of both the Editor and Editor in Chief, the RA_M2 progresses upon re-assessment and results in Acknowledgement, which is the final obligatory element for this stage. The element of Acknowledgement is realised through an editorial acknowledgement letter (or email) whereby the author receives confirmation from the editor with regards to acceptance of the RA_M1 or RA_M2 for consideration of publication, respectively.

Realisation of CC_1 results in progression of a rubber RA in sequence through the obligatory element of Submission and in some cases optional elements of Inquiry and Re-submission prior to gaining acceptance for consideration of publication. Submission of RA_M1 may also result in the element of Desk Rejection which represents a direct threat to the success of the macro genre owing to unsuitability of a rubber RA for publication. Reasoning for Desk Rejection include irrelevant scope of research and depth of content, as well as ethical misconduct on the part of the authors, which correspond with the notion of non-compliance with the obligatory elements in the macro stage of Initiation as well as their contribution towards the social purpose and CC_1. Both resultant notifications of this stage, i.e. obligatory element of Acknowledgement and the element of Desk Rejection serve the gatekeeping purpose effectively and preserve the ultimate goal of the macro genre that is to see a quality publication into print. The notion of quality predominantly implies the social purpose of this macro genre and pertains to all possible points of failure representing threats to success in each of the macro stages.

5.5.1 Macro Genre Pathway Trends: Macro Stage of Initiation

Aspects of field, tenor and mode based on the core genres representing obligatory elements, as well as participant roles contribute and reflect CC_1 for the macro stage of Initiation. The elements of Non-submission or Desk Rejection directly threaten the success of the macro genre and reflect an outright failure of the discourse event. The results of this analysis will be an applicable description for the rubber RA publication macro genre as a whole in its possible iterations, including points of contention within the macro stage of Initiation. The macro genre

pathway trends for the macro stage of Initiation reveals occurrences of obligatory and optional elements within the data set in accounting for their sequence and iterations, accordingly. Classification of the macro stage of Initiation and its obligatory elements of Submission and Acknowledgment resulting from the analysis of manuscript pathways within the data set include optional elements of an Inquiry and re-Submission. Both Non-submission and Desk Rejection as potential threats are coded in red to represent failure due to non-participation in and termination of the discourse event, respectively. The obligatory element of Acknowledgment indicates successful progression of the rubber RA into the macro stage of Evaluation (Figure 5.6).

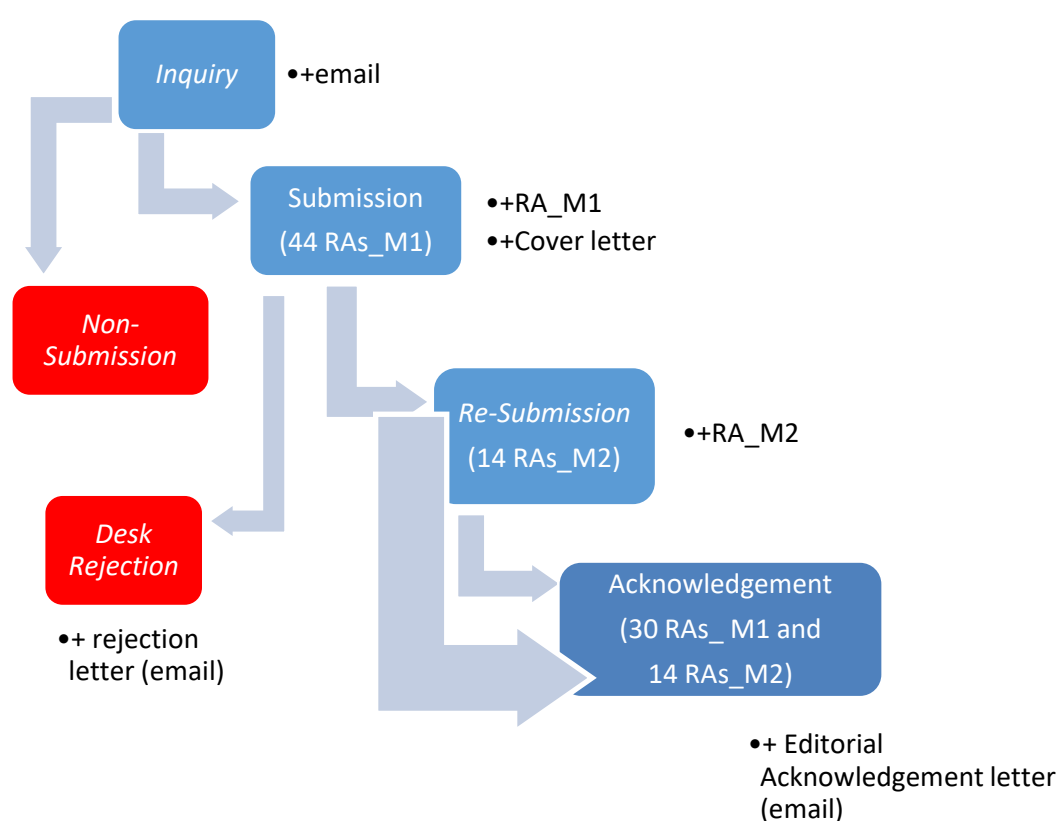


Figure 5.6: Occurrence of obligatory and optional elements as well as threats, with corresponding realisation statements (core genres) within the macro stage of Initiation

The number of rubber RAs in Figure 5.6 is representative of the actual discourse event from analysis of the dataset for the macro stage of Initiation. The publication macro genre pathway for 44 RAs_M1 begins with the element of Submission as the first obligatory element for the stage of Initiation as well as the overarching discourse event involving core genres of the rubber RA and cover letter from the author as realisations. Submission of the rubber RA to the journal

office is a prerequisite to its acceptance for consideration of publication, in correlation with CC_1. Following the obligatory element of Submission, a system notification to the Editor on receipt of the new submission leads to assessment of RA_M1 in the form of a technical check. This is a standard procedure regardless of the outcome possibilities being either an Editorial Acknowledgement (obligatory), Re-submission of RA_M2 (optional, due to technical check failure and subject to re-assessment) or a Desk Rejection (threat). It is interesting to note at this point that each outcome reflects the social purpose and goal of the rubber RA publication macro genre in a positive light towards ultimately seeing only a quality publication to print.

A re-iteration of Submission occurs for 14 rubber RAs that result in a technical check failure during the first iteration of assessment. In realising the social purpose of this macro stage and macro generic goals, all 44 rubber RAs (M1 and M2) progress towards the obligatory element of Acknowledgement, confirming acceptance for consideration of publication in line with CC_1. The power differences between editor and author are marked in this stage, whereby the element of Submission and its corresponding assessment are pertinent to the final outcome. The present data set does not include occurrences of the optional element Inquiry and threats of Non-submission and Desk Rejection. Inquiry and Non-submission are particularly unavailable within the online submission system, while Desk Rejection was not applicable to rubber RAs within the dataset. Nonetheless, a combination of obligatory and optional elements together with potential threats above reflect the beginning of the rubber RA publication macro genre pathway. Successful progression along this macro stage is pertinent towards the ultimate social purpose and goal of the rubber RA publication macro genre. The author's perseverance in pursuing significant points of contentions in view of obligatory and optional elements, i.e. "Inquiry", "Submission" and "Re-submission" and "Acknowledgement" are vital to achieving the goal of this macro stage, while leading the rubber RA towards the following macro stage of "Evaluation".

The structure for this macro stage of Initiation realises the social purpose of the rubber RA in attaining acceptance (or rejection) for consideration of publication in a peer reviewed journal. Correspondingly, it outlines part of the system comprising the rubber RA publication macro genre. The dataset analysis also confirms the obligatory elements for all rubber RAs navigating through this stage of the process, with 31.8% of rubber RAs in the dataset realising the optional element of Re-submission and no instances of Inquiry, Non-submission or Desk Rejection. An important part of the Initiation macro stage is certainly the element of Submission, comprising the rubber RA as a core genre and central text, which evolves from its

original form by the changes imposed upon it in each stage of the publication macro genre. The analysis above also reveals that an editorial Acknowledgement indicates the end of this macro stage while confirming progression of the central text into the following macro stage.

5.5.2 Generic Structure Potential (GSP) Analysis for the Macro Stage of Initiation

Results of this Generic Structure Potential (GSP) analysis will reveal trends of the present dataset with respect to sequence and iterations of obligatory and optional elements in the macro stage of Initiation. CC_1 for the macro stage of Initiation is the acceptance of a submitted rubber RA for consideration of publication. This analysis delineates obligatory elements of Submission and Acknowledgment that must ideally occur in any case involving submission of rubber RAs to a particular journal. Validity of the “Initiation” macro stage, comprising obligatory and optional elements is a measure of how the data for 44 rubber RAs shape and emulate the progression of the discourse event.

Generalisation on the order of sequence for each of these elements and their realisation are a result of texts and genres within the data set. Both CC_1 and the obligatory elements in each case are similar and interdependent, resulting in a robust model for this macro stage of the publishing process. Structurally, this context applies to RA submissions for consideration of publication in general. The analysis expresses a range of elements and their order, to delineate involvement of texts appropriate to the CC, leading to the GSP for this macro stage as part of the rubber RA publication macro genre. The iteration of obligatory and optional elements in sequence including potential threats (Figure 5.7) is a robust representation for the macro generic stage of Initiation. As an end result at this point, the analysis determines the typical genre pattern while accounting for variations to this pattern to complement trends of occurrences within the dataset and an insider perspective.

Step 1: Contextual Configuration (CC_1):

Initiation - Acceptance of submitted rubber RA for consideration of publication

Step 2: OBLIGATORY elements - What elements must occur:

1. Submission (RA_M1+ Cover letter): Sub
2. Acknowledgment (Editorial acknowledgment letter/email): Ack

Step 3: OPTIONAL elements - What elements may occur:

(a) Inquiry (email): Inq

(b) Re-submission (RA_M2): Re-sub

Step 4: THREATS – What elements threaten the success of the macro genre:

(c) Non-submission: NS

(d) Desk Rejection (rejection letter/email): DR

Step 5: SEQUENCE - Where they must/ may occur:

$[(\text{Inq}) \cdot (\text{NS})] \text{Sub}^{(\text{Re-Sub})} \wedge \text{Ack} (\text{DR})$

Key: optional - (); threats - (); obligatory elements sequence - $\wedge$; [] restricted mobility of elements within; iteration - superscript

Linguistic or textual realisation of obligatory, optional and iterative elements:

(Inquiry - email) (non-submission) $\wedge$ Submission – RA_M1 and cover letter^(re-submission – RA_M2) $\wedge$ Acknowledgement – editorial acknowledgement letter or (desk rejection – rejection letter)

Step 6: ITERATION - How often can/do they occur:

$[(\text{Inq}=\text{n/a}) (\text{NS}=\text{n/a})] \text{Sub}=44 \text{ RA_M1}^{(\text{Re-sub}=14 \text{ RA_M2})} \wedge \text{Ack}= 30 \text{ RA_M1 and } 14 \text{ RA_M2} (\text{DR}=\text{n/a})$

Note: Numbers indicate frequency of occurrence in the data set; n/a – not applicable to instances within the data set

Figure 5.7: GSP analysis for the macro stage of Initiation

It is the occurrence of obligatory elements in the sequence of Submission and Acknowledgement that reflect the typical genre pattern for this stage. Results of the GSP analysis in step 6 (Figure 5.7), reveals that 30 rubber RAs (68.2%) of the 44 rubber RAs in the data set realise this typical genre pattern. This finding confirms significance of each obligatory element as part of the macro stage and their applicability to the rubber RA publication macro genre. The remainder 14 rubber RAs (31.8%) involve a reiteration, in the form of Re-

submission (and re-assessment) as an optional element, in realising the obligatory element of Acknowledgement. All pathways in the dataset lead to this final obligatory element which realises CC_1 and marks an end point to the macro stage of Initiation.

My insider perspective confirms the optional elements and threats in sequence, specifically the possibility of an Inquiry, Non-submission and Desk Rejection. An Inquiry typically occurs prior to Submission, while Non-submission instead threatens the success of the macro genre in relation to an author's disengagement with the overarching macro genre. Both elements of Non-submission and Desk Rejection indicate that an RA fails to realise CC_1. However, an RA progresses from the obligatory element of Submission prior to Desk Rejection. Although the RA does not proceed onto the stage of Evaluation, this element still contributes to preserving the macro generic goal and social purpose of only seeing a quality publication to print.

5.6 Optional Elements in the Macro Stage of Evaluation

Upon gaining acceptance for consideration of publication, the rubber RA progresses along the macro genre pathway into the macro stage of Evaluation involving obligatory elements of Invite, Accept, Assign, Feedback and Acknowledgement. In realising CC_2, a conditional or unconditional editorial decision for the rubber RA is applicable upon adequate realisation of each obligatory element within this stage. The initial obligatory element of Invite involves selection and invitation of reviewers by the editor, upon approval of the Editor in-Chief. Reviewer invitation letters are subject to acceptance by individual subject specialists serving the journal, either in their capacity as Editorial Board Members or reviewers. This involves the obligatory element of Accept, and its realisation in the form of an email, accepting the invitation to review a particular rubber RA. If a subject specialist declines an invitation to review a rubber RA, contrary to the typical genre pattern where acceptance of the reviewer invitation fulfils the obligatory element of Accept for the macro stage of Evaluation, then the optional element of Re-invitation is applicable in view of unavailability of reviewers as well as a declination of invitation, or in some cases non-response to the invitation beyond reminder letters and the set deadline. The optional element of Re-invitation works well to aid progression along the macro generic pathway, with new reviewer invitations and ultimately Assignment of a quorum of reviewers, accordingly.

Subsequent obligatory elements within the macro stage of Evaluation are Assign, Feedback and Acknowledgement. Termination is in order for reviewers who have yet to submit their comments upon a minimum of three completed reviews received for any particular rubber RA. Termination is realised by a letter from the Editor to remaining reviewers who have yet to comment, informing them of the status and a note of thanks for their consideration to review. Although this optional element does not serve to realise either preceding or ensuing obligatory elements to it, Termination acts as a closure to the element of Assign, for reviewers that have not fulfilled the element of Feedback, as CC_2 for the stage of Evaluation.

5.6.1 Macro Genre Pathway Trends: Macro Stage of Evaluation

Analysis on progression of 44 rubber RAs along the macro genre pathway deduces the first obligatory element to Invite 158 reviewers. The editor delivers these reviewer invitation emails and acceptance from 129 reviewers thereby fulfil both obligatory elements of Invite and Accept. With respect to the present analysis, 18.4% of reviewers decline the initial reviewer invitation leading to reiteration of the [Invite^Accept] stage to allow for potential assignment of three or four reviewers to each rubber RA. In this regard a further 29 reviewers ultimately accept the invitation to review. Overall, the third obligatory element Assign involves 158 reviewers with realisations comprising a set of documents, i.e. reviewer assignment letter, RA_M1/M2, RR template and subsequent reminders.

The fourth obligatory element of Feedback involves a total of 138 RRs including specific remarks to the editor and annotated comments for the author. Reviewer feedback on the rubber RA reveals CC_2 as RRs realise the social purpose of the macro stage of Evaluation. The obligatory element of Acknowledgement and its realisation in 138 reviewer thank you letters convey appreciation for their valuable comments and terms of recommendation in view of the rubber RA's publication merits. RRs within the dataset thus fulfil 87.3% of the obligatory element Feedback resultantly, considering a minimum of 3 reviews for all 44 rubber RAs were in order at this point. The optional element of Termination then allows for closure with regards to 20 reviewers who had yet to submit their feedback. Figure 5.8 below shows the progression of obligatory, iterative and optional elements involving micro stages and their corresponding realisations throughout the macro stage of Evaluation.

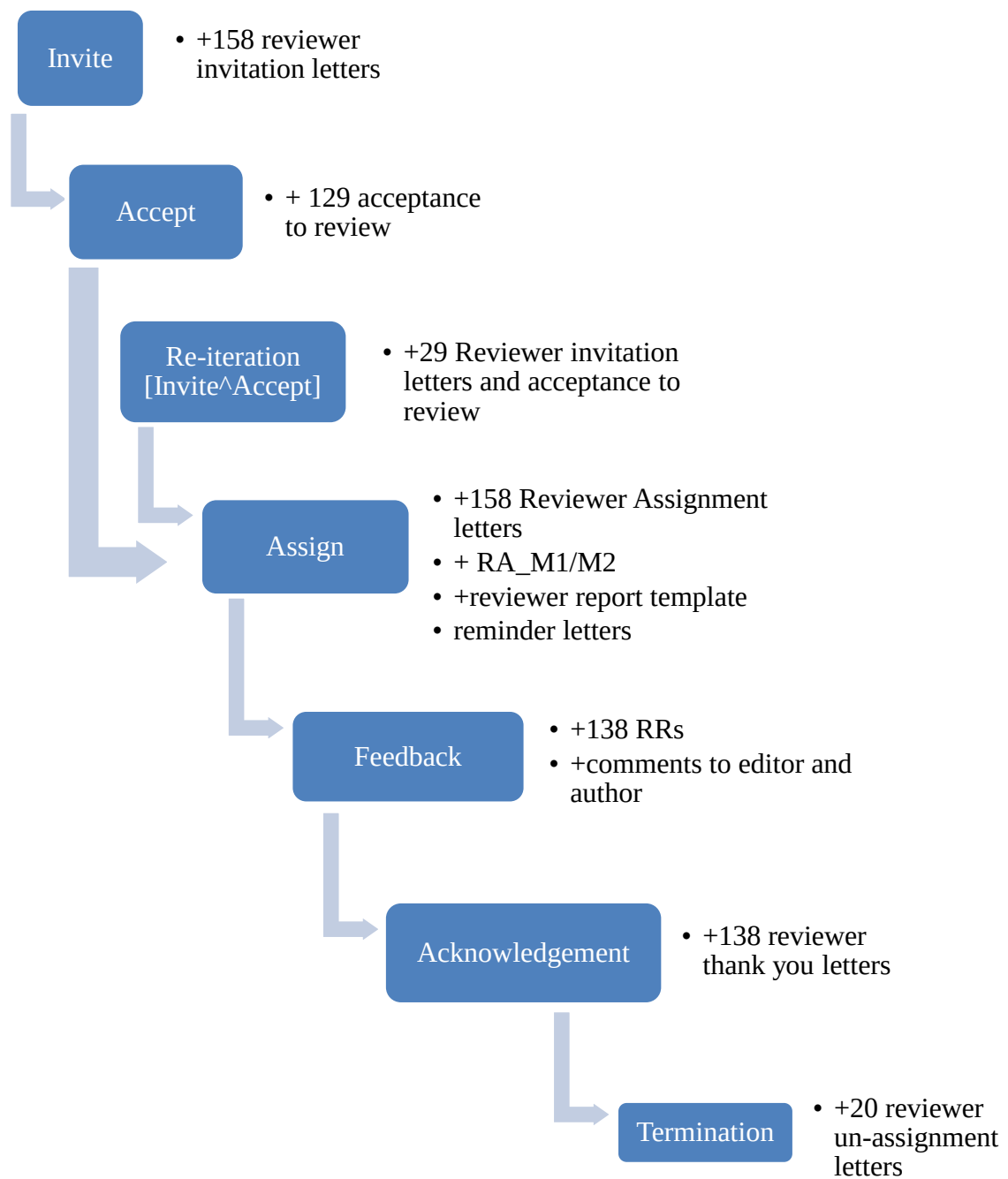


Figure 5.8: Pathway trends within the macro stage of Evaluation (first iteration)

5.6.2 GSP Analysis for the Macro Stage of Evaluation

All micro stages within the dataset successfully realise each obligatory element leading to that of Feedback, contributing to the social purpose for the macro stage of Evaluation. The obligatory element of Acknowledgement and optional element of Termination mark an end to the discourse exchange at this point. Obligatory and optional elements in sequence and specific iterations within the dataset infers a GSP analysis for the stage of Evaluation.

Step 1: Contextual Configuration (CC_2):

Evaluation – Reviewer feedback on the rubber RA

Step 2: OBLIGATORY - What elements must occur:

1. Invite (Reviewer invitation letters)
2. Accept (Reviewer emails confirm acceptance of invitation)
3. Assign (Reviewer assignment letter, set of documents)
4. Feedback (RRs/comments to Editor and author)
5. Acknowledgement (Reviewer thank you letters)

Step 3: OPTIONAL - What elements can occur:

- (a) Re-invitation (reiteration of Invite[^]Accept micro stages)
- (b) Termination – incomplete assignments upon a minimum of 3 reviews on a particular manuscript

Step 4: SEQUENCE - Where they must/can occur:

$[1 \wedge 2^{(a)}] \wedge 3 \wedge 4 \wedge (b)$

Key – optional elements (); obligatory elements sequence ^; [iteration ^{superscript}]

Linguistic or textual realisation of obligatory, optional and iterative elements:

[Invite – reviewer invitation letter ^ Accept – reviewer acceptance letter ^(re-iteration of Invite[^]Accept)] ^ Assignment – reviewer assignment letters ^ Feedback – RRs/comments to

Editor and Author ^ Acknowledgment– reviewer thank you letters ^ (Termination – termination letters)

Step 5: ITERATION - How often can/do they occur:

[158 Reviewers ^ 129 Reviewers ^(29 Reviewers)] ^ 138 Reviewers ^ 138 Reviewers ^ (20 reviewers)

*Numbers indicate frequency of occurrence in the data set

Figure 5.9: GSP Analysis for the macro stage of Evaluation (first iteration)

The iteration of obligatory and optional elements in sequence represents the orientation for the macro stage of Evaluation as shown in Figure 5.9. As an end result at this point, the analysis determines the typical macro genre pattern, to complement trends of occurrences and variations within the dataset. It is the occurrence of obligatory elements in the sequence of Invite, Accept, Assign, Feedback and Acknowledgement that reflect the typical macro genre pattern for this macro stage. Results of the GSP analysis reveals that all 44 rubber RAs in the data set realise this genre pattern, with an exception of re-invitation of 29 reviewers, by means of reiteration of the [Invite ^ Accept] micro stages to realise the obligatory element of Assign. This finding confirms significance of each obligatory element as part of the macro stage and their applicability to the rubber RA publication macro genre. All pathways in the dataset lead to the obligatory element of Feedback which realises CC_2 and upon Acknowledgement (obligatory) and Termination (optional), respectively mark an end point to the stage of Evaluation.

5.7 Optional Elements in the Macro Stage of Conclusion

The first obligatory element of Decision entails that of a conditional or unconditional editorial decision on the rubber RA. The Editor analyses reviewer feedback and recommendations to accept conditionally or unconditionally, otherwise reject the rubber RA prior to realisation of this element in view of an editorial decision letter to the author. The optional element of a Committee Review is part of the present dataset in association with contradicting feedback on a particular rubber RA, for example when a RR(s) indicates unambiguous recommendations against publication of the RA while another RR(s) commends conditional acceptance subject to minor or major revision of the RA. The optional element of a Committee Review involves consideration of feedback and reviewer recommendations on

the RA by the Editorial Committee, with a consensus towards the editorial decision. Realisation of a Committee Review are minutes of the meeting, as a record of editorial decisions on rubber RAs with contradicting reviewer feedback. In such cases, the Committee Review allows for adequate realisation of the obligatory element of Decision.

The editorial decision ultimately determines the fate of a rubber RA and its progression along the macro stage of Conclusion. Although unconditional acceptance at this point does not occur in the context of the present dataset, this possibility represents CC_3 and success of the macro genre for a particular rubber RA. In contrast, an editorial decision of reject or resubmit is a direct threat and terminates the rubber RA's pathway in preserving the social purpose and goal of the macro genre. A conditional editorial decision subject to major or minor revision is therefore favourable towards the rubber RA potentially achieving publication. However, from an insider perspective and my experience as journal editor the rubber RA does not progress in macro stage of Conclusion if an author decides to Withdraw the submission at this point (after the obligatory element of Decision) and this directly threatens the success of the macro genre. Comments from the Editor and reviewers in some cases deter further efforts on the part of the author to revise the manuscript in reference to requests for repeating experiments or performing additional investigations to support publication of the rubber RA. Even so, this does not occur in the case of rubber RAs within the dataset and RAs with a conditional acceptance progress along the macro stage of Conclusion upon realisation of the second obligatory element of Revision.

Submission of RA_M2/M3 upon further revision and ARR are key to complying with the obligatory element of Revision. Re-evaluation of RA_M2/M3 by the editor subjects the rubber RA to a technical check together with the author's responses to reviewer comments in view of justifications by the author. Re-evaluation of RA_M2/M3 upon the second element of Revision, may lead to an optional element of Minor amendments, otherwise directly towards the final obligatory element of Accept (Figure 5.9). The optional element reflects further correspondence via email between editor and author on incorporation of specific improvements to the RA_M2/M3 prior to the final obligatory element of Accept. In this regard upon re-submission of RA_M2/M3 with minor amendments the editor confirms final acceptance of the rubber RA for publication in an editorial decision letter. Both these pathways with or without the optional element of Minor amendments symbolise the successful and unproblematic progression of the rubber RA along the macro generic pathway towards publication.

In revealing a subsequent major point of contention, re-iteration of the macro stage of Evaluation is possible in view of the obligatory element of Revision where RA_M2/M3 was subject to an editorial decision of conditional acceptance subject to major revision. Disparity in responding to specific issues, otherwise lacking rationale or incorporation of enhancements to the rubber RA also results in re-iteration of the macro stage of Evaluation. In such an instance, the rubber RA continues to progress along each obligatory element within a second iteration of the macro stage of Evaluation. Re-iteration however usually only involves a single reviewer in view of obligatory elements Invite, Accept, Assign, Feedback and Acknowledge. This potentially involves inviting a previous reviewer from the first iteration to evaluate RA_M2/M3 and recommend a decision with options to accept or reject unconditionally otherwise suggest a second conditional acceptance for consideration of publication subject to further revision. The reviewer Feedback then contributes towards that of a second iteration for the obligatory element of Decision which in some cases reflects the end of the rubber RA's journey towards publication (or lack of it) resulting in either an unconditional final acceptance and achieving publication or, a rejection. Otherwise the rubber RA may once again be subject to a conditional acceptance upon either major or minor revision in this second iteration of the macro stage of Conclusion.

For rubber RAs that undertake the circuitous path with a second iteration of the macro stage of Evaluation followed by a second iteration of the macro stage of Conclusion, the obligatory element of Revision realises submission of RA_M3/M4 and ARR, correspondingly. Re-evaluation at this point comprises a technical check on RA_M3/M4 and could lead to the most circuitous route to publication as the present dataset reveals. The optional element of a third iteration of the macro stage of Evaluation may occur due to lacking revisions and unclear issues in the course of revising the rubber RA. The third obligatory element of Accept within the macro stage of Conclusion only occurs in the event of a successful technical check on RA_M3/M4 and an editorial decision letter realises this in confirming unconditional final acceptance of the rubber RA for publication in an upcoming issue. The obligatory element of Accept in this macro stage of Conclusion reveals CC_3 and goals of the rubber RA publication macro genre in seeing a quality publication to print. Successful progression of the rubber RA throughout the stage of Conclusion confirms CC_3 in allowing unconditional final acceptance of the rubber RA for publication. In that regard, problematic progression of the rubber RA reveals significant points of contention with possibilities of further iterations of both macro stages of Evaluation and Conclusion. Analysis of the data set for the macro stage of Conclusion

reveals that occurrence of both obligatory and optional elements progress along distinct pathways, as illustrated in Figures 5.10 to 5.13 below.

5.7.1 Macro Genre Pathway Trends: Stage of Conclusion

At this point, realisation of the first obligatory element of Decision by the Editor is applicable in the case of 22 rubber RAs, with an editorial decision of conditional acceptance subject to both major (13 RAs) and minor (9 RAs) revision. The other 50 % of rubber RAs within the dataset (22 RAs) have contradicting feedback in view of reviewers' recommendation terms indicating both conditional acceptance as well as that of rejection. These circumstances require the optional element of Committee Review (Figure 5.10) as the first element before that of the obligatory element of Decision, resulting in an editorial decision for the 22 rubber RAs based on a consensus during an Editorial Committee meeting. In realising the obligatory element Decision, 12 of these 22 rubber RAs were rejected. Rejection of the rubber RA reflects a direct threat to the success of the macro genre. Among the 12 rubber RAs rejected, the decision on 4 RAs were an outright rejection while 8 RAs were subject to a decision of reject and resubmit for consideration of publication. This corresponds to a failure to progress along the macro genre pathway and marks an end point for all of the 12 rubber RAs upon rejection as none of these RAs were resubmitted for consideration of publication (coded in red, Figure 5.10). The editorial decision to reject or that of reject and resubmit however mirrors the macro generic goal of seeing only a quality publication to print as it remains consistent with an unconditional editorial decision on the rubber RA.

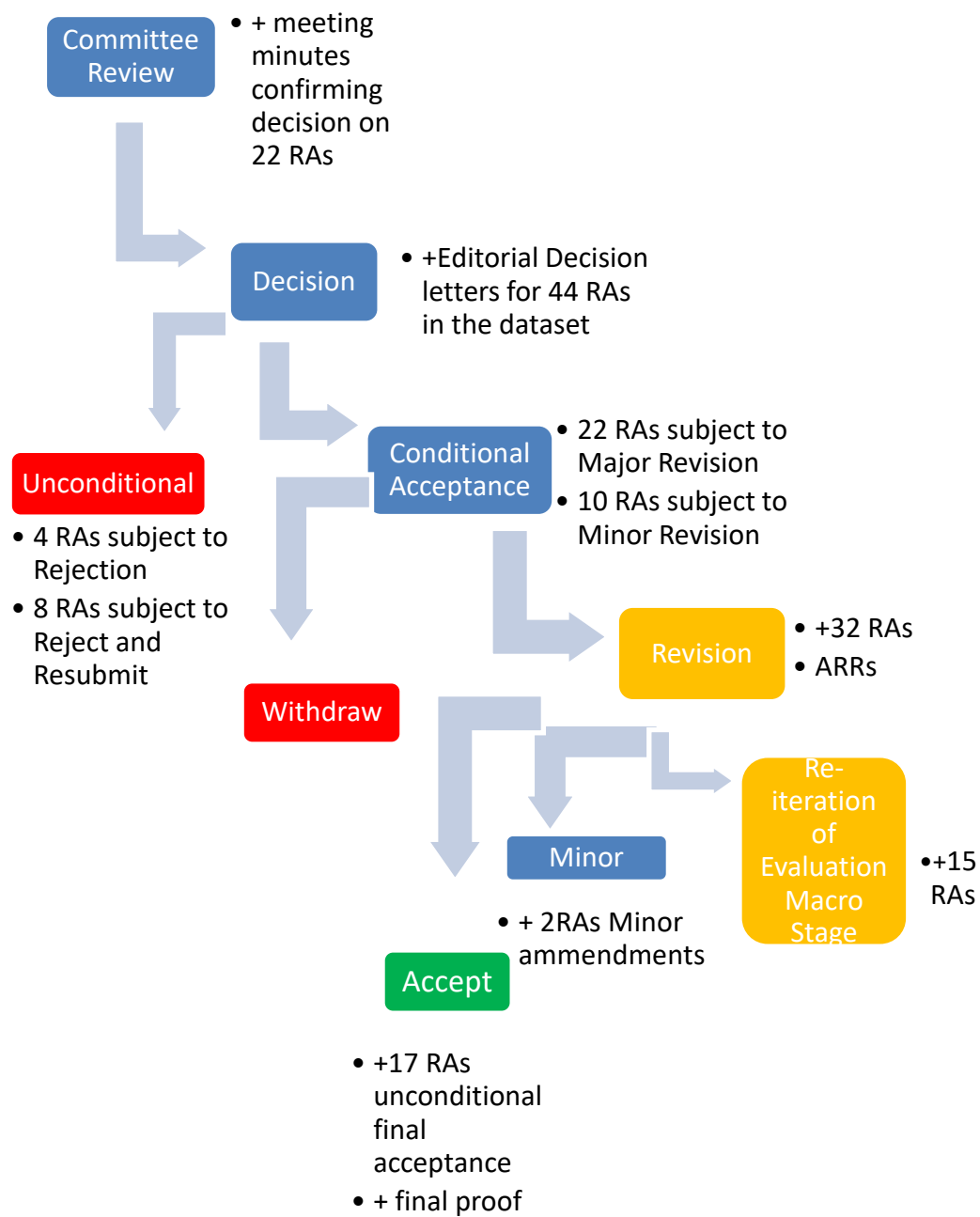


Figure 5.10: Pathway trends within the macro stage of Conclusion (first iteration) for 32 RAs

The optional element of Committee Review also results in the conditional acceptance of 10 rubber RAs, where 9 RAs were subject to a major revision and 1 RA upon a minor revision. Together with 22 RAs that attained conditional acceptance realising the obligatory element of Decision, 32 rubber RAs within the dataset were to be considered for publication subject to realisation of the second obligatory element of Revision and subsequent progress along the pathway through the macro stage of Conclusion.

The first instance involves progression of the rubber RA along the first iteration of the macro stage of Conclusion followed by the second iteration of the macro stage of Evaluation. Submission of 32 revised RAs and responses to reviewers realise the second obligatory element of Revision. Re-evaluation in the form of a technical check on these 32 rubber RAs and responses to reviewers reveals three possibilities in reference to the obligatory and optional elements within the macro stage of Conclusion. 15 rubber RAs progress along the pathway to realise the third and final obligatory element of Accept, achieving final unconditional acceptance for publication while realising the macro generic goal and social purpose. The optional element of Minor amendments is valid for 2 rubber RAs, upon which both RAs achieve final acceptance for publication realising the obligatory element of Accept.

A second iteration, i.e. optional element of re-iteration of the stage of Evaluation occurs for 15 rubber RAs within the dataset (Figure 5.11). This reflects a major point of contention and circuitous route along the macro generic pathway. In view of the dataset analysis, realisation of obligatory elements within the stage of Evaluation include that of Invite, Accept and Assign, prior to the elements of Feedback and Acknowledgement involving 20 reviewers. The numbers indicate a minimum of 1 reviewer assigned to each rubber RA and 5 additional assignments, accordingly.

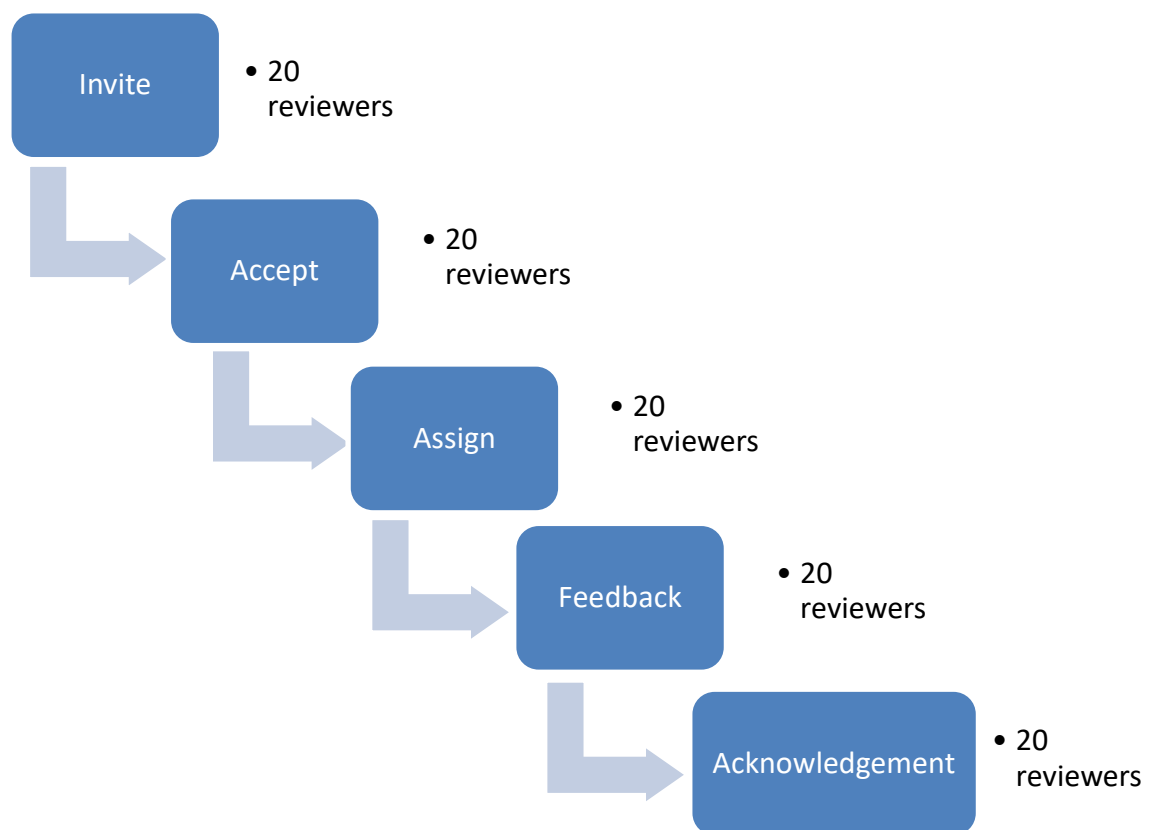


Figure 5.11: Second iteration of macro stage of Evaluation for 15 RAs

All 15 rubber RAs then progress along this second iteration of the macro stage of Evaluation, to realise the first obligatory element of Decision as part of the second iteration of the macro stage of Conclusion (Figure 5.12). Of these, 2 rubber RAs involve the optional element of Committee Review. 9 rubber RAs continue to progress along the macro generic pathway in realising the obligatory element of Decision, with that of a conditional acceptance subject to further major or minor revision. 6 rubber RAs complete the journey in achieving an unconditional editorial decision realising the macro generic goal and social purpose. An unconditional final acceptance is accorded to 5 rubber RAs while 1 rubber RA faces rejection (coded in red, Figure 5.12).

Figure 5.12 below reflects the progression of 9 rubber RAs along the second iteration of the macro stage of Conclusion. Submission of both the revised RA and response to reviewers realises the second obligatory element of Revision. Re-evaluation subjects these RAs to a technical check upon which 8 rubber RAs progress to realise the final obligatory element of Accept in achieving publication in line with the goal and social purpose of this macro stage and that of the macro genre. Only 1 rubber RA within the dataset is subject to the most circuitous route compared with that of other rubber RAs within the dataset, involving a 3rd iteration of the stage of Evaluation. Obligatory elements are in line with that of Invite, Accept, Assign, Feedback and Acknowledgement involving only one reviewer. This rubber RA progresses towards the 3rd iteration of the macro stage of Conclusion in realising the obligatory element of Decision (Figure 5.13). The rubber RA receives an unconditional final acceptance for publication at this point and successfully confirms its status towards achieving publication.

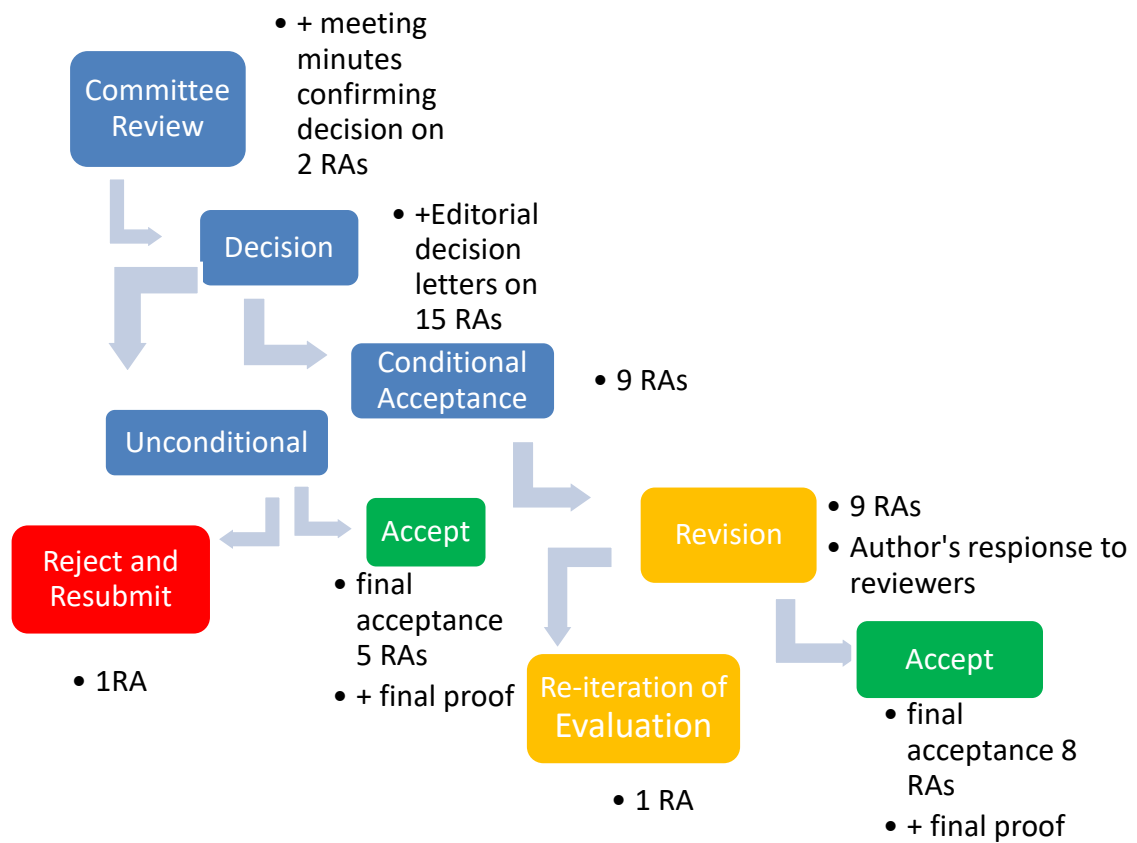


Figure 5.12: Second iteration of macro stage of Conclusion for 15 RAs

Figures 5.10, 5.11, 5.12 and 5.13 indicate potential points of success (green) in view of the obligatory element Accept and failure of the discourse event (red) in view of the obligatory element of Decision and unconditional editorial decisions of reject, reject and resubmit as well as the element of Withdraw (upon receiving a conditional acceptance on the rubber RA) which directly threaten the success of the macro genre. The obligatory element of Accept is applicable to 31 rubber RAs (70.5%) within the dataset and it is interesting to note that although editors and reviewers are at the decision making end, findings from this and other phases of analysis, i.e. case studies and semantic coding analyses, confirm the author's discourse skills in negotiating structural, technical and functional issues ultimately rely on successfully engaging in a dialogue with the reviewers and editor. Specific points of contention (yellow) include the obligatory element of Revision, specifically the RA_M2/M3/M4 and ARR as well as the second and third iterations of both Evaluation and Conclusion macro stages.

The latter iteration of macro stages involve 16 rubber RAs (36.4%) and are a consequence upon re-evaluation of RA_M2/M3/M4 and ARR. However, only 1 rubber RA among these pathways involving a re-iteration of the macro stages involves failure of the discourse event in an unconditional editorial decision of reject and resubmit. Further, 13 rubber RAs (29.6%) within the dataset result in failure of the discourse event due to an editorial decision of reject or reject and resubmit during the first iteration of the macro stage of Conclusion. Ultimately, all RAs within the dataset and their respective pathways through the macro stages of Initiation, Evaluation and Conclusion allow for a robust mapping of the overarching discourse event to integrate obligatory and optional elements together with iterations, potential threats to success and likelihood of success in view of the points of contention throughout the RA publication macro genre.

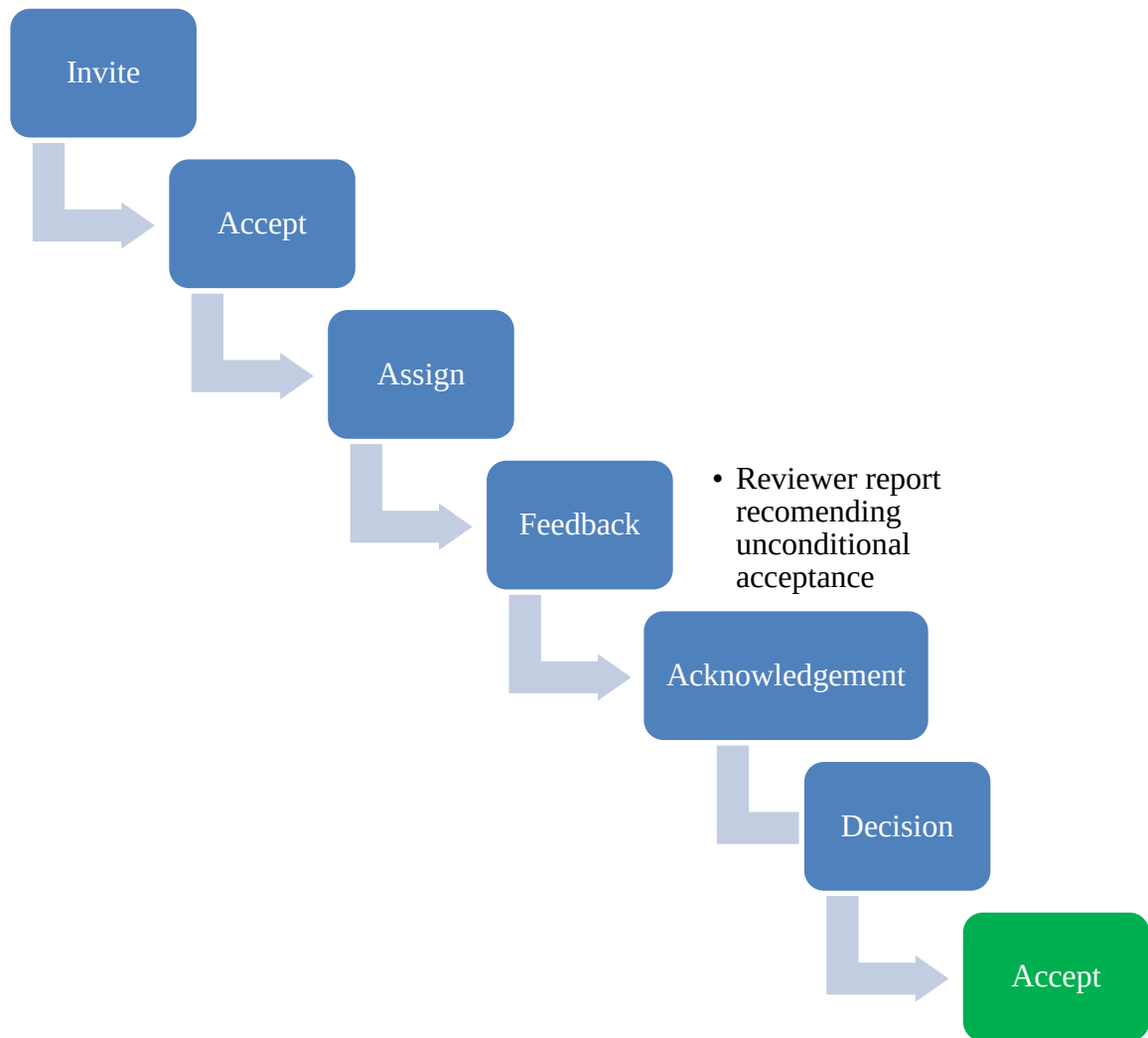


Figure 5.13: Third iterations of Evaluation and Conclusion macro stages for 1 RA

5.7.2 GSP Analysis for the Macro Stage of Conclusion

All micro stages within the data set successfully realise each obligatory element within the macro stage of Evaluation and subsequently cross the threshold into the macro stage of Conclusion. A major point of contention in this regard are the elements of Decision (obligatory) and Committee Review (optional) that determine the fate of a rubber RA and its potential progression or end point along the macro generic pathway. Figure 5.14 represents the GSP analysis for the rubber RAs progressing along respective pathways in reference to the stage of Conclusion within the dataset. The analysis confirms trends and possibilities involving obligatory, optional and iterative elements. These elements together with their sequence of occurrence as well as respective iterations symbolise a complete analysis of the rubber RA publication macro genre, in view of the overarching discourse event comprising macro stages of Initiation, Evaluation and Conclusion.

Analysis of rubber RAs within the dataset, including the discussions on pathway trends confirms the validity and interpretation of the macro genre in keeping with the CCs of each macro stage, to represent the overall social purpose and goal of seeing a quality publication to print. The analysis below includes six possible sequences of obligatory and optional elements with second iterations of both the macro stages of Evaluation and Conclusion as well as a third iteration of the macro stage of Evaluation. Re-iterations of these macro stages indicate the variation in pathway trends are points of contention resulting in a circuitous route towards publication, or lack of it. Each instance seeks to preserve the ultimate social purpose and goal of the macro genre, in view of CCs and respective elements within the macro stages.

Step 1: Contextual Configuration (CC_3)

Conclusion - Unconditional final acceptance for publication, otherwise reiteration of Evaluation stage

Step 2: OBLIGATORY elements: What elements must occur:

1. Decision (Conditional/Unconditional editorial decision letter)
2. Revision (Revised RA_M2/M3/M4, ARR)
3. Final Acceptance (Editorial Decision letter)

Step 3: OPTIONAL elements: What elements can occur:

(a) Committee review (minutes of meeting) – editorial decisions made following a consensus

(b) Minor Amendments (communicated with author and finalised prior to final acceptance)

(c) Re-iteration of Evaluation (Re-assignment of reviewer(s))

(d) Re-iteration of Conclusion

Step 4: SEQUENCE - Where they must/can occur:

(i) $(a)1^{[2(b)]^3}$

(ii) $(a)1$

(iii) $(a)1 \wedge 2^{[(c)^\wedge(d)]} \wedge 3$

(iv) $(a)1 \wedge 2^{(c)} \wedge 3$

(v) $1 \wedge 2^{(c)} \wedge 1$

(vi) $1 \wedge 2^{[(c)^\wedge(d)^\wedge(c)]} \wedge 3$

Key – optional elements (); obligatory elements sequence $\wedge$; [] restricted mobility of elements within; iteration ^{superscript}

Linguistic or textual realisation of obligatory, optional and potential elements:

(i) (committee review – meeting minutes) $\wedge$ Decision – editorial decision letters $\wedge$ Revision –RA_M2/M3/M4 and ARR $\wedge$ (minor amendments – resubmission of revised RA) $\wedge$ Final Acceptance - editorial decision letter

(ii) (committee review – meeting minutes) $\wedge$ **Decision – editorial decision letters (Reject/Reject&Resubmit)**

(iii) (committee review – meeting minutes) $\wedge$ Decision – editorial decision letters $\wedge$ Revision –RA_M2/M3/M4 and ARR $^{[(\text{re-iteration of Evaluation macro stage})^\wedge(\text{re-iteration of Conclusion macro stage})]}$ $\wedge$ Final Acceptance - editorial decision letter

(iv) (committee review – meeting minutes) $\wedge$ Decision – editorial decision letters $\wedge$ Revision –RA_M2/M3/M4 and ARR $^{(\text{re-iteration of Evaluation macro stage})} \wedge$ Final Acceptance - editorial decision letter

(v) (committee review – meeting minutes) $\wedge$ Decision – editorial decision letters $\wedge$ Revision –RA_M2/M3/M4 and ARR $^{(\text{re-iteration of Evaluation macro stage})} \wedge$ **Decision – editorial decision letters (Reject/Reject&Resubmit)**

(vi) (committee review – meeting minutes) $\wedge$ Decision – editorial decision letters $\wedge$ Revision – RA_M2/M3/M4 and ARR $[(\text{re-iteration of Evaluation macro stage}) \wedge (\text{re-iteration of Conclusion macro stage})] \wedge$ Final Acceptance – editorial decision letter

Step 5: ITERATION - How often can/do they occur:

- (i) (4 RAs) 17 RAs $\wedge$ 17 RAs (2 RAs) $\wedge$ 17 RAs
- (ii) (12 RAs) 12 RAs
- (iii) (3 RAs) 8 RAs $\wedge$ 8 RAs $[(8 \text{ RAs}) \wedge (8 \text{ RAs})] \wedge 8 \text{ RAs}$
- (iv) (3 RAs) 5 RAs $\wedge$ 5 RAs $(5 \text{ RAs}) \wedge 5 \text{ RAs}$
- (v) 1 RA $\wedge$ 1 RA $(1 \text{ RA}) \wedge 1 \text{ RA}$
- (vi) 1 RA $\wedge$ 1 RA $[(1 \text{ RA}) \wedge (1 \text{ RA}) \wedge (1 \text{ RA})] \wedge 1 \text{ RA}$

Figure 5.14: GSP analysis for the stage of Conclusion

The optional element of Committee Review precedes the obligatory element of Decision for 22 rubber RAs (50%) in the dataset, and ultimately all rubber 44 RAs progress through the latter in the first iteration of the macro stage of Conclusion. In the second iteration of the macro stage of Conclusion only 2 rubber RAs involve the optional element of Committee Review. Both variations relate the beginning of this macro stage which then progresses in 6 distinct variations within macro stage(s) pathways towards end points in the discourse event marking both a failure and direct threat (rejection) or success (acceptance) in view of achieving publication.

The iterations of obligatory and optional elements in sequence represent a robust representation for the macro stage of Conclusion, and respective iterations in revealing pathway trends of rubber RAs within the dataset. The analysis reveals that none of the rubber RAs rigorously observe the typical genre pattern in reference to occurrences of obligatory and optional elements within the data set. However, my insider perspective as editor confirms and validates the occurrence of obligatory elements in the sequence of Decision, Revision and Accept as a reflection of the typical genre pattern for this macro stage. Results of the GSP analysis reveal that 17 rubber RAs (38.6%) of the 44 pathways within the data set realise the least circuitous route with only a single iteration of both macro stages of Evaluation and Conclusion. The obligatory element of Revision reflects a significant point of contention due to disparities in reviewer concerns and lack of justifications in the ARRs. Upon realisation of this element, 8 rubber RAs (18.2%) progress through a second iteration of both Evaluation and

Conclusion macro stages prior to Accept, while 6 rubber RAs (13.6%) progress through a second iteration of the macro stage of Evaluation prior to an unconditional editorial decision of Accept (5 RAs) and Reject (1 RA), respectively. Only 1 rubber RA within the dataset progresses through a remarkably circuitous route towards achieving publication, with three iterations of the macro stage of Evaluation and two iterations of the macro stage of Conclusion, respectively.

5.8 Summary of the Rubber RA Publication Macro Genre GSP Analysis

Pathway trends within the dataset reveal macro stages of the macro genre in sequence consisting elements that lead towards success or failure in achieving publication. Results and discussion in this chapter reflect how each rubber RA continues to preserve the social purpose of the macro genre in view of progression through the various points of contention and in some cases termination, due to direct threats to success of the macro genre confirming lack of publication. A rubber RA that does not keep with the typical genre pattern in the macro stage of Initiation may lead to lack of publication or failure of the discourse event due to the threats of Non-submission or Desk Rejection. The latter however reflects failure upon participation in the macro generic stage of Initiation, observing the element of Submission while the former implies an outright circumvention of participation in the discourse event. Although the dataset does not comprise both these occurrences, an insider perspective allows for an indication of these elements as potential threats to success of the macro genre.

With reference to results and discussion on rubber RAs in the subsequent macro stage of Evaluation, it is the obligatory element of Feedback that ultimately motivates an editorial decision on the rubber RA in the macro stage of Conclusion. The obligatory element Decision may result in direct threats to the success of the macro genre in view of a rejection or resubmission of the rubber RA, as well as the possibility of withdrawal by an author at this point which terminates the rubber RA's journey towards publication. The latter possibility does not occur within the dataset and 32 rubber RAs (72.7%) with a conditional acceptance progress along the macro stage of Conclusion. Of these, only 1 rubber RA results in failure of the discourse event upon the element of Decision in the second iteration of this macro stage, leading to a rejection. Although pathway trends within the dataset confirm various points of contention in the possible iterations of Evaluation and Conclusion macro stages, there is light at the end of the tunnel for 31 rubber RAs achieving unconditional final acceptance for

publication. Overall, the analysis of pathway trends result in a typical macro genre pattern comprising each obligatory element as well as that of variations to the macro genre pattern in view of optional elements and potential threats preceding or ensuing obligatory elements and an unsuccessful genre pattern leading to termination of the rubber RA's journey prior to publication. Hence, the macro genre analysis of the dataset reveals these significant boundaries in realising possibilities of success despite a problematic route towards the ultimate goal of only seeing a quality publication to print.

CHAPTER 6

Metalinguistic Considerations in Scientific Writing for Publication

6.1 Introduction

The genres of reviewer reports (RR) and authors' responses to reviewers (ARR) reflect participants' involvement in a matrix which includes the macro stages of Initiation, Evaluation and Conclusion (Chapter 5). They involve a potentially complex dialogue in writing within the rubber RA publication macro genre. A semantic coding analysis of both these core genres serve to reiterate findings from the case studies (Chapter 4) and macro genre analyses (Chapter 5), respectively. In particular, RRs reveal potentially threatening metalinguistic issues pertaining to scientific writing for publication while ARR is indicative of tenor relations, in view of successfully engaging with reviewers as part of an overarching discourse event. Results of this coding analysis highlight significant points of contention in achieving the macro generic goal. The coding methodology (section 3.6, Chapter 3) involves classification of the dataset, which comprise 139 RRs along with 39 ARRs.

This chapter thus focuses on the macro stages of Evaluation and Conclusion: in particular the obligatory elements of Feedback and Revision, which involve the genres of RRs and ARRs. Semantic coding of both these genres lead to trends in proportion of metalinguistic codes in RRs and trends in ARRs. Quantification of these metalinguistic codes provide a means of determining the extent of weaknesses and risks in scientific writing for rubber RA publication within the dataset. However, the strength of this analysis is in qualitative interpretations of each metalinguistic issue as a result of extracts from RRs particularly those recommending rejection of rubber RAs within the dataset.

6.2 Metalinguistic Coding of Reviewer Reports (RRs)

RRs correspond with the rubber RA genre expectations and that of scientific writing for publication. Metalinguistic coding of RRs highlight an association of these generic expectations with structural, functional and technical issues in the rubber RA as distinct semantic categories. A typology of metalinguistic codes and discussions on the analysis

pertaining to each semantic category revealed specific weaknesses that pose a potential threat towards publication of the rubber RA. Creation of each code reveals metalinguistic issues pertaining to scientific writing for publication. Structural issues are associated with various sections of the RA, *i.e.* Introduction, Methodology *etc.*, while functional issues are representative of grammatical considerations in writing and technical issues reflect expectations of scientific English style.

Quantitative and qualitative analyses are means of reporting findings resulting from the semantic coding efforts with reference to the notion of register in SFL pertaining to field, tenor and mode of discourse (Martin and Rose 2007). While all texts reveal configurations of field, tenor and mode, certain macro stages within the discourse event have elements which are more crucial registerially in reference to the macro genre analysis (Chapter 5). As previously discussed, RRs recommend a decision of major or minor revision as well as reject or resubmit for 44 rubber RAs within the dataset. Four categories of rubber RAs according to editorial decisions comprise the following: 18 RAs with conditional acceptance subject to major revisions which in some cases involve either two or three iterations of the Evaluation macro stage; 13 RAs with conditional acceptance subject to minor revisions; 5 RAs with an outright rejection; and 8 RAs with a decision to reject and resubmit.

Code creation was semantically proportional to the nature of scientific writing issues and similar trends in RRs. As an indication of the severity of scientific writing issues affecting publication of the rubber RA, further delineation of each code provides a realisation of actual shortcomings from the proportion of RRs recommending rejection of rubber RAs. Definitions of codes for each semantic category and corresponding data extract samples allow for a clear depiction of the coding process and discussion of results. The values of overall proportions of occurrence and proportions of occurrence in RRs recommending rejection of rubber RAs represent the variables of quantitative analysis for this phase. To enhance quality and content of the rubber RA, metalinguistic coding and semantic categorisation of reviewer feedback highlight issues that potentially lead towards improving scientific merits of the publication. Information resulting from this analysis of RRs and ARRs represent original findings and interpretations that will contribute to the macro genre of rubber RA publication. The findings affirm the notion of a dialogic discourse event comprising these core genres, in revealing further points of contention towards success of the macro genre.

6.2.1 Structural Issues

The discussion of structural issues and respective codes in this category predominantly reflect the field and mode of discourse as they correspond to each section of the rubber RA. Table 6.1 consists of codes, their corresponding definitions as well as examples of data extracts from RRs. Together, this information serves as a basis for the discussion on the prevalence of each code in RRs within the dataset and those recommending rejection of rubber RAs. Each code in its metalinguistic form represents a semantic association with corresponding data extracts in RRs for the purpose of this analysis and further interpretation of findings.

Codes	Definition	Data extract sample
Title descriptiveness	unfitting selection of the RA title, lacking conciseness and inadequate description resulting in a general rather than precise representation	<i>The influence of endogenous hormones on the somatic embryos formation from anthers of Hevea brasiliensis Muell.Arg</i> <i>This study is not about the influence, but only a monitoring of growth regulators during the somatic embryogenesis process. This study is especially interesting by the number of GR analysed</i> <i>- Somatic embryogenesis instead of somatic embryos formation would be better</i>
Abstract	necessitates rewriting, in terms of language and specificity concerning summarisation of key aims, results and conclusions	<i>The abstract should be self explanatory and should give a clear idea about the article. Unfortunately the abstract of the current article is missing all of these attributes and it is rather ambiguous.</i>
Discussion of previous findings reported	lack of comprehensiveness in discussing findings from previous work as part of the literature review in the domain of study	<i>The author does not quote the large amount of prior art, the state-of-the-art of this subject as published by other authors. Out-of the 9 references 8 are self-citations, going back as far as 1983. On page 8 at the bottom, the author states: "For this stage, one can use many available models published in the literature until today". This is exactly my point: he should have given an overview of these literatures.</i>
Methodology	flaws due to incomprehensive procedural and material descriptions	<i>The authors did no mention of the materials used in this study. The suppliers and the properties of the materials used and their references are also not provided. The authors should be transparent in providing the information as the paper is to be published in a public domain for the use of the general public.</i>

Reporting results optimally	specificity and avoiding repeat of similar information in figures as well as subsequent tables and text	<i>Figure 4 as the trend is similar to Figure 3, only the values vary. Tabulating the values of the parameters would be clearer</i>
Representation of illustrations	inappropriate depiction of results	<i>Fig;1- not descriptive Fig:2- the legend is incomplete, the graphs are not completely described and the figure is too large, could be split into two or three figures</i>
Discussion of results reported	incomprehensive discussion of results resembling a disarray in flow and representation of information	<i>Particle size of zinc peroxide dispersion - The authors only provided a cumulative particle amount. It would be interesting to actually see the actual particle size distribution. Is the diameter value given a volume average or a surface area averaged value? How about the polydispersity? All this information is quite valuable.</i>
Citation formatting	Inconsistent, inaccurate and incomprehensive incorporation of bibliographic references to literature. Careless preparation of references	<i>There is no constant format of referencing throughout the manuscript, for example page3 line 15 and line 19.</i>

Table 6.1: Structural issues - codes, definitions and data extracts

Table 6.2 below contains the number of RRs comprising each code. In reference to Equations 1 and 2 (section 3.6, Chapter 3): the number of RRs comprising each code (a) are listed in the first column; the number of RRs recommending rejection of rubber RAs comprising each code (b) are listed in the second column; the third column is a proportion of RRs comprising each code (c), calculated according to Equation 1: $(a)/139*100\% = (c)$; with the base value (a) and number RRs recommending rejection of rubber RAs comprising each code (b), corresponding proportions of RRs recommending rejection of rubber RAs comprising each code (d) is calculated according to Equation 2: $(b)/(a)*100\% = (d)$. This last column is particularly crucial for assessing the severity of each of the weaknesses of metalinguistic structural issues in general and in relation to each section of the rubber RA.

Structural issues	Number of RRs comprising each code (a)	Number of RRs recommending rejection of rubber RAs comprising each code (b)	Proportion of RRs comprising each code (c)	Proportion of RRs recommending rejection of rubber RAs comprising each code (d)
Title descriptiveness	24	4	17.3%	16.7%
Discussion of previous findings reported	27	7	19.4%	25.9%
Methodology	108	13	77.7%	12%
Abstract	66	8	47.5%	12.1%
Representation of illustrations	58	4	41.7%	6.9%
Reporting results optimally	49	10	35.3%	20.4%
Discussion of results reported	54	9	38.9%	16.7%
Citation formatting	53	4	38.1%	7.6%

Table 6.2: Coding results and proportions of structural issues in RRs

Below, a graphical representation of the proportions in Table 6.2 indicates prevalence of each code within the overall dataset in comparison with its impact on potential rejection of the rubber RA involving these issues (Figure 6.1). Significant peaks (<40%) for overall proportions of the codes “methodology”, “abstract” and “representation of illustrations” are observable in Figure 6.1. This is followed by “discussion of results reported”, “reporting results optimally” and “citation formatting”. I infer from these results that weaknesses exist in structural issues within the dataset. In reference to register, structural issues pertaining to the field of discourse include “title descriptiveness”, “discussion of previous findings reported” as well as “discussion of results reported”. These codes are representative of the generic structural expectations of an RA, in validating a direct correlation to the Title, Introduction and Discussion sections of the RA. The remaining codes under the category of structural issues are reflective of modal concerns in direct reference to the generic sections of an RA. These include “abstract”, “methodology”, “optimal representation of results and illustrations” as well as “citation formatting”.

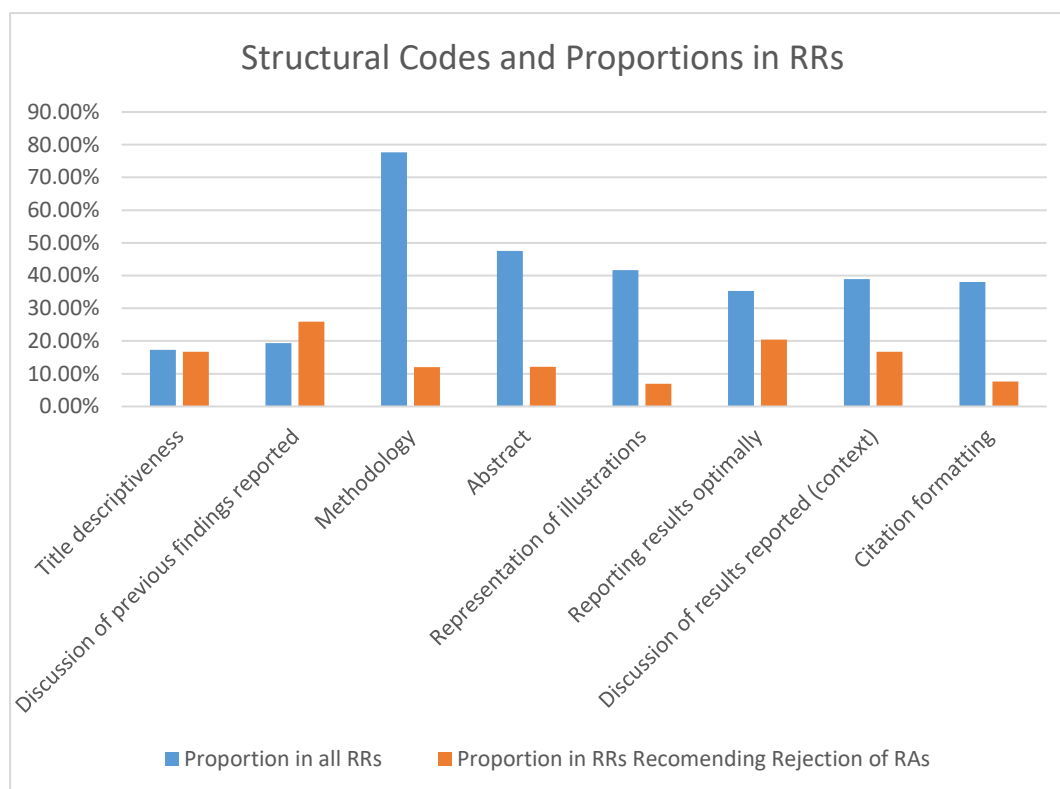


Figure 6.1: Proportions of structural codes in RRs

The metalinguistic coding of structural issues reveals a great deal of weaknesses quantitatively, with a trend of higher proportions of occurrence pertaining to the Methodology, Abstract, Results and Discussion sections of the RA. A further interpretation of these results are trends of code proportions in RRs recommending rejection of rubber RAs. Figure 6.1 indicates peaks in rejected rubber RAs for the codes “discussion of previous findings reported” and “reporting results optimally”. Proportions for other codes were below 20% in both overall occurrences and rejected rubber RAs.

Both variables in Figure 6.1 indicate the severity of structural issues and the level of threat towards achieving publication, respectively. Beginning with the structural issues associating the field of discourse, “title descriptiveness”, which refers to weaknesses with the rubber RA title, represents 17.3% in the overall proportion of RRs and 16.7% of these RRs recommend rejection of rubber RAs. Hence, 83.3% of these RRs within the dataset recommend an editorial decision of conditional acceptance subject to either major or minor revision despite weaknesses in “title descriptiveness”. Reviewer feedback on this issue includes suggestions to reword titles that either seem misleading or otherwise lack relevance and specificity to the study. If a title is viewed as poor, the rest of the publication may also be seen as such, although the discussion

on subsequent structural issues reflect that this code represents a minor consideration and may not impose an independent threat in achieving publication.

“Discussion of previous findings reported” represents issues in the Introduction section of the rubber RA. Inability to cite and discuss critically previous publications implies a lack of transparency and familiarity to research trends in associating a timeline of developments in the field. A combination of these weaknesses account for 19.4% of overall proportion in RRs, while a notable 25.9 % of this total comprise recommendations to reject rubber RAs with this issue. A major concern among these rubber RAs related to incomprehensive citations, lacking an overview of previous literature while relying on self-citations. This affects the discussion on how the study and findings relate to previous work in the scientific domain. Some of these rubber RAs quote a few earlier works and fail to demonstrate a deep understanding and justification for the study. An important aspect of addressing this concern is for authors to undertake a holistic historical perspective and clarify the motivation of their study, including aspects of acquiring new understanding or what it aims to improve. Reviewers recommend familiarisation with previous findings and a subsequent discussion that will assist interpretation of results in the rubber RA. Excluding previous publications on the research topic affects establishing objectives in the Introduction of an RA. Instead, this issue reflects an insufficient review of the literature and lack of understanding on work in the domain. Consequently, 74.1% of RRs comprising this metalinguistic issue recommend a conditional acceptance subject to major revisions for publication.

The code “discussion of results reported” relates to shortcomings in the Discussion section of the rubber RA. These metalinguistic flaws concern incomprehensive discussion of results resembling a disarray in flow and representation of information occurring in 38.9% of RRs. 16.7% of these RRs recommend rejection, while the remaining 83.3% generally involve major revisions. Among considerable issues pertaining to this code are lack of explanation on prediction of results and application of a theoretical model to the experimental data, as well as how the conventional method compares with the discussion in the rubber RA. Additionally, some discussions are muddled and lacking in other valuable information resulting in points that are missing in a particular argument, as shown in the data extract (Table 6.1). Further weaknesses involve a discussion implying lack of evidence in relating a critical assessment of the work or new discoveries. The discussion is thus inadequate and necessitates being rewritten in view of lacking literature references to support findings of the study. In this context the discussion lacks an explanation for unlikely scenarios pertaining to derivation of results and

their potential inferences. Addressing these major considerations are critical towards successful progression along the macro genre pathway.

The discussion on the remaining codes reflect the mode of discourse beginning with “abstract” where 47.5% of RRs associate flaws which necessitates rewriting, in terms of language and specificity concerning summarisation of key aims, results and conclusions. Of these, 12.1% involve recommendations for rejecting the rubber RAs on the basis of ambiguity and missing information in allowing for a clear idea of the rubber RA, noting that an abstract should serve as a self-explanatory genre. These important considerations represent examples of potential publication threats in association with this code.

The code “methodology” records the highest proportion of 77.7% in RRs. This metalinguistic concern also includes issues with reporting the methodology of statistical analysis. The code has a proportion of 12% of RRs recommending rejection of rubber RAs. This clearly points to a major weakness of rubber RAs within the dataset because it is the only structural issue that occurs consistently in all 13 rejected rubber RAs in the dataset. Reviewer considerations pertaining to this code indicate severe consequences as a result of incomprehensible reproducibility of the study. Specification of details regarding material and procedural descriptions including purpose, selection criteria and relevant references are noteworthy aspects in view of its applicability upon publication. Concerns of statistical treatment imply situations concerning an erroneous description, or in some cases where it is necessary but missing.

The structural issues of “reporting results optimally” and “representation of illustrations” comprise coding of reviewer feedback that indicate inappropriate depiction of results, in terms of specificity and avoiding repetition of similar information in figures as well as subsequent tables and text. These codes account for 35.3% and 41.7% in RRs, and a proportion of 20.4% and 6.9% in RRs recommending rejection, respectively. Although the latter occurs in a higher proportion of RRs, its potential threat towards rejection of the rubber RA is considerably lower than that of “reporting results optimally”. Inaccuracy in presenting results optimally poses a threat towards publication due to lack of transparency resulting from careless preparation of the rubber RA. Core issues in RRs pertaining to “representation of illustrations” are the need for additional figures, inaccurate figure captions, figures which appear to be repetitive, or those with incomplete descriptions and figure legends as well as suggestions for better representation either in the form of a table or by splitting the figures.

The final structural metalinguistic issue is that of “citation formatting”, which also relates to the mode of discourse. This code refers to issues with inconsistent and incomprehensive incorporation of bibliographic references to literature. Careless preparation of references as a generic section of the rubber RA may lead to an unfavourable editorial decision, affecting the outcome of the discourse event. Results indicate a proportion of 38.1% of this code in RRs, while the recommendation of rejection in RRs comprising this code is minimal at 7.6%. Reviewers tend to signpost inaccuracies in citations and indicate missing information in references, hence rectifications for this issue are straightforward and usually involve minor revisions with an exception of excessively inaccurate citations throughout. Addressing this issue to avoid termination along the pathway towards publication or potential rejection of the rubber RA means attending to reviewer recommendations concerning omission of important literature references, issues with consistency in formatting throughout the rubber RA as well as incomprehensive or otherwise unnecessary citations.

The metalinguistic coding of structural issues reveals a great deal of weaknesses quantitatively, with a trend of higher proportions of occurrence in the Methodology, Abstract, Results and Discussion sections of the rubber RA. However, a significant peak in RRs recommending rejection is apparent for the codes pertaining to Introduction and Results section of the rubber RA, at 25.9% and 20.4%, respectively. Remaining codes in this category involve a lower rejection ratio of less than 10 to 20%. With reference to the qualitative analysis of RRs, these weaknesses predominantly involve a conditional acceptance subject to either major or minor revisions. Apart from addressing these issues subjectively, adherence to structural expectations of the rubber RA as a core genre is key towards achieving publication and realising goals of the publication macro genre.

6.2.2 Technical Issues

The semantic category of technical issues comprises metalinguistic codes that reflect predominantly the field of discourse, while the codes “equations, abbreviations, formulae and units” and “impact and value of publication” specifically concern the mode and tenor of discourse, respectively. Table 6.3 lists each code in this category, along with corresponding definitions and samples of data extract.

Codes	Definition	Data extract sample
Novelty of findings	lack of original information which is a prerequisite for	<i>All-in-all this is a rather primitive compounding study with no scientific or newness value, which I do not recommend for</i>

	consideration of RA publication in a peer reviewed journal	<i>publication in a respected journal as Journal of Rubber Research.</i>
Relevance to the scope of JRR	irrelevant to the scope of the journal, labelling the RA as of general importance or important in another field	<i>unimportant; of general importance; outside the scope of JRR</i>
Justification of study	setting the RA in context by stating a clear purpose to support how it will advance knowledge and explaining previous efforts relating to the present work as well as assumptions of any models used	<i>This just contains a few quotes from earlier works. It fails to demonstrate a very deep understanding of the component and the benefits of its non-linear characteristics in a suspension system. A better historical perspective of the development of the rubber encapsulated helical spring is required in order for it to be clear what the starting point and motivation of the current study is. What aspects of the design manufacture do you aim to improve and why or what new understanding do you hope to acquire?</i>
Justification of results	lack of further explanation on results and observations to allow for a strong correlation between objectives and findings	<i>Also zinc peroxide containing films showed lower toxicity compared with the zinc oxide containing films. How about effect of film thickness?</i>
Justification of claims	weak and unwarranted assertions on research and findings reported, hence conclusions are not defensible	<i>As the average particle size of the zinc peroxide dispersion was found to be less than 5 μm, thus the dispersion it is suitable to be used in expected the dispersion can be added to the latex system. Why suitable? What is the average particle size of XNBR latex?</i>
Inaccurate statements (interpretation of results)	flaws in interpretation of results lead to lack of accuracy in statements otherwise misleading or contradictory statements	<i>It is incorrect to refer to the attack of the radicals on the double bonds of the butadiene. The attack would be on the double bonds of the butadiene repeat unit of the XNBR.</i>
Inaccurate terminologies /scientific taxonomies	lacking definition otherwise a suitable alternative for inaccurate taxonomies	<i>"additional liquid silicone" the authors should give definition for this word, since it is not well known word</i>

Consistency of information presented	errors and inconsistencies in the RA, especially in correlating both method and results of the study	<i>Fig 3,4 show mg/L as the unit but the experiment inform % amount release. The meaning is different</i>
Omission of unsupported data and discussion	an issue with inclusion of information or lack of it, otherwise an irrelevant discussion with no specific reference to either findings reported or its interpretation, vice versa	<i>Mention is made of a composite containing 20 phr chitosan but this does not appear later in the text, tables or figures. It should be removed.</i>
Unrelated objectives and findings	results that do not correspond with the methodology or vice versa, where the objectives are not in tangent with the methodology and results	<i>The acid groups of the XNBR latex were predominantly ionized as shown in Figure 2. There was no mention of using FTIR in the experimental part, above. Please put this in the experimental part above.</i>
Contrasting data and literature	various shortcomings in the experimental set up, lack of a control experiment and flaws in theoretical treatment of the data resulting in sets of statements where the data and literature contradict	<i>The first paragraph of page 6 claims good dispersion of the fillers for A1, A2 and A3 on the basis of the micrographs presented in Figure 3 but there is no identification of the fillers in the micrographs. Later in the paragraph it is stated that larger agglomerates are evident in the micrograph of A6, again without clearly identifying the agglomerates. It is not possible to draw these conclusions from the micrographs presented, particularly given that the field of view is only about 6 x 4 μm and the average particle size of the ground calcium carbonate is 5 μm</i>
Equations, abbreviations, formulae and units	flaws in representation of information	<i>Figures 3-5: The units of desorption or desorption rate used are inappropriate and render the figures misleading. The desorption expressed here is the concentration of Cu(II) in the 10 mL solution formed in a 12 hour desorption period as measured by AAS. The total amount released given in Figure 3 is the sum of the concentrations of the 10 mL samples which contained Cu(II) at a discernible level. The concentrations should have been converted to mg of Cu(II) and the desorption given in Figure 4 expressed in these units. These figures do not provide a suitable basis for the discussion of kinetics at the top of P. 7</i>

Impact and value of publication	insignificant application of the study and findings reported demonstrating neither scientific nor practical value	<i>It was well established that some organic accelerators in the sulfur vulcanization system are cytotoxic and could cause allergic reaction. Thus it is not unexpected that the sulfurless system can be non-cytotoxic. Being non-cytotoxic may not necessarily mean it is biocompatible. Just like HDPE could be non-toxic but it is not biocompatible. In fact it is a major environmental pollutant from the packaging industry.</i>
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Table 6.3: Technical issues – codes, definition and data extracts

In reference to the calculations for structural codes in RRs according to Equations 1 and 2 above, Table 6.4 below comprises similar information on technical codes including columns representing number of RRs comprising each code (a), number of RRs recommending rejection of rubber RAs comprising each code (b) and results of the quantitative analysis conducted to determine variables of proportion of RRs comprising each code (c) and proportion of RRs recommending rejection of rubber RAs comprising each code (d), prior to a discussion of emergent trends and their implications.

Technical issues	Number of RRs comprising each code (a)	Number of RRs recommending rejection of rubber RAs comprising each code (b)	Proportion of RRs comprising each code (c)	Proportion of RRs recommending rejection of rubber RAs comprising each code (d)
Novelty of findings	29	1	20.9%	3.5%
Relevance to the scope of JRR	13	1	9.4%	7.7%
Justification of study	32	4	23.0%	12.5%
Justification of results	53	7	38.1%	13.2%
Justification of claims	25	7	18.0%	28.0%
Inaccurate statements (interpretation of results)	41	13	29.5%	31.7%
Inaccurate terminologies/scientific taxonomies	33	7	23.7%	21.2%
Consistency of information presented	21	6	15.1%	28.6%
Omission of unsupported data and discussion	21	3	15.1%	14.3%
Unrelated objectives and findings	12	6	8.6%	50.0%

Contrasting data and literature	10	9	7.2%	90.0%
Equations, abbreviations, formulae and units	43	9	30.9%	20.9%
Impact and value of publication	18	7	13.0%	38.9%

Table 6.4: Coding results and proportions of technical issues in reviewer reports

Figure 6.2 below depicts a graphical representation of both variables for each code, where peaks in rejection proportions indicate severity of predominant threats towards publication despite considerably lower proportions of occurrence. This is noteworthy in view of how these issues contribute to an unfavourable editorial decision in view of potential rejection. On the contrary, a lower rejection proportion directly implies an increase in conditional acceptance of the rubber RA subject to either major or minor revisions.

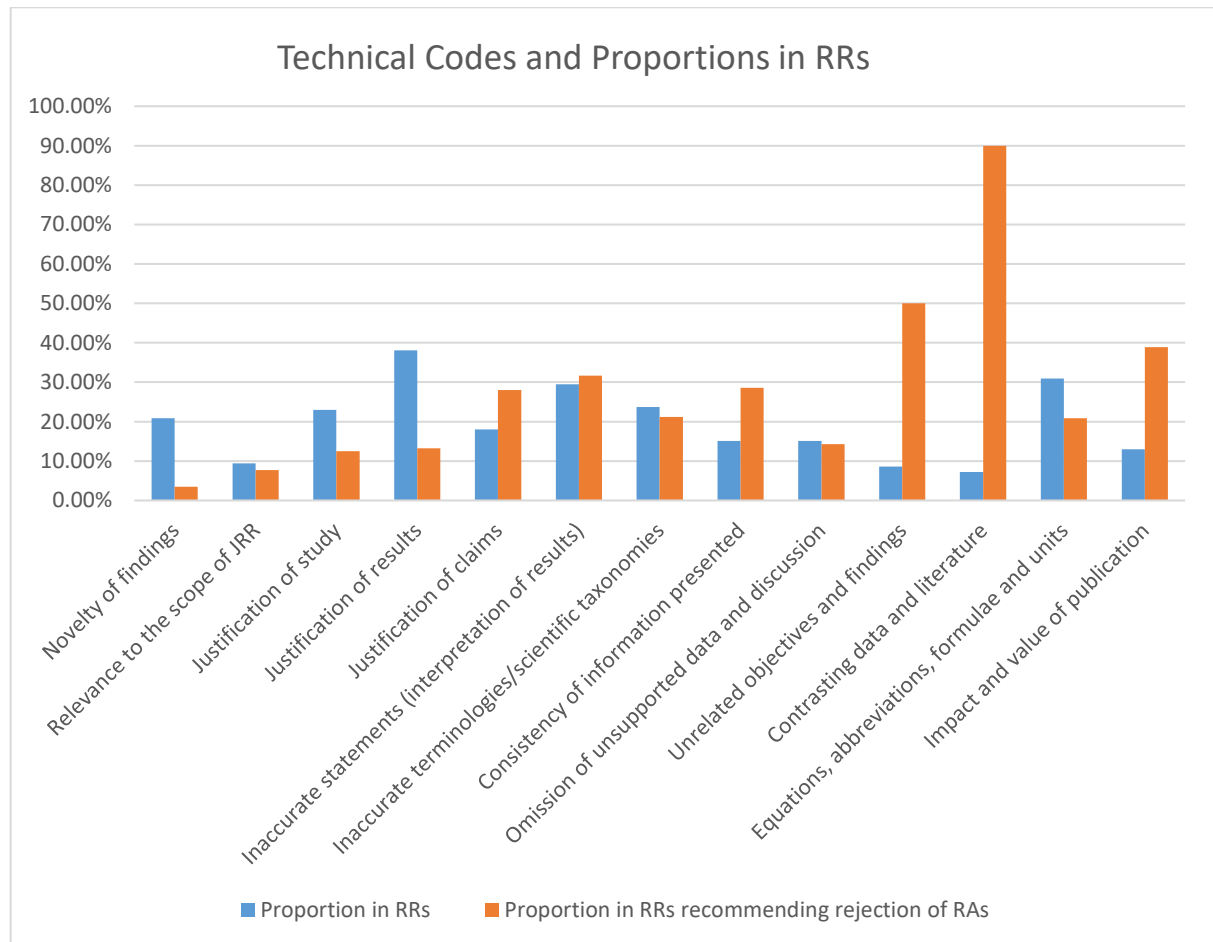


Figure 6.2: Proportions of technical codes in RRs

The minimal proportions are particularly evident for the code “relevance to journal scope” where both overall occurrence (9.4%) and recommendation of rejection (7.7%) in RRs are

among the lowest in this semantic category. These values correspond with the fact that most rubber RAs that are irrelevant to the scope of the journal face a “Desk Rejection” earlier on after submission (Chapter 5, section 5.5). Hence at this stage of Evaluation, RRs would not require skimming through this issue at large with an exception of specific technicalities, otherwise labelling the rubber RA as of general importance or important in another field.

The code “novelty of findings” is associated with reviewer feedback indicating lack of original information in the rubber RA. Originality is of course a prerequisite for publication in a peer reviewed journal. A proportion of 20.9% of reviewer feedback for “novelty of findings” led to unfavourable outcomes, either in the form of major revision that involves representation and inclusion of the lacking details prior to a reiteration of the stage of Evaluation (Section 5.7, Chapter 5) or as recommendations for an outright rejection. The latter occurred in 3.5% of RRs indicating the lack of newness and scientific value in the study.

The codes “justification of study”, “justification of results” and “justification of claims” indicate substantial proportions of variables in this category as field related technical issues, in reference to the topic of discourse. These codes are applied to incomprehensive, impractical or missing information in the research and findings reported as well as that of weak and unwarranted assertions typically in the objectives, methodology, discussion and conclusion sections of the rubber RA (data extracts, Table 6.3). The highest proportion of these is “justification of results” appearing in 38.1% of RRs, of which 13.2% involve rejection. “Justification of study” is a concern in 23% of RRs, with 12.5% of this proportion involving rejection, and “justification of claims” comprises a lower proportion of 18% in RRs. However, the last has a higher rejection proportion of 28%; although the last issue has a lower overall proportion in RRs, it involves an almost twofold higher likelihood of recommendation for rejection. Therefore, “justification of claims” is most highly correlated to success with scientific writing for publication. The overall results suggest that instances of rejection involve a combination of issues with “justification of results, study and claims” for rubber RAs where conclusions are not defensible. RRs highlight lack of reference to previous work in the field and hence conclude unsuitability for publication even if presentation of the work was better executed.

In most other cases with codes of “justification of results, study and claims” representing 86.8%, 87.5% and 72% of rubber RAs respectively, a conditional acceptance subject to major revision was applicable to address these concerns. Lacking justifications of the results, study

and claims within the dataset imply the current status of the rubber RA's content is unable to support and strengthen the ideas being developed. Rectification may involve incorporation of missing explanation or negotiation from the author's point of view. Instances within the dataset also suggest additional investigational efforts to remove speculation and provide evidence or refute arguments in some cases. Instances of redress specific to "justification of study" require setting the rubber RA in context by stating a clear purpose to support how it will advance knowledge and explaining previous efforts relating to the present work as well as assumptions of any models used. Issues with "justification of results and claims" indicate lack of further explanation of results and observations which could potentially have validated conclusions. These issues have a direct association with the objectives in the introduction of the rubber RA and discussion of results. Nonetheless, to allow for a strong correlation between objectives and findings, it is pertinent for authors to realise that these flaws indirectly impact the strength of both Conclusion and Abstract of the rubber RA.

The codes "inaccurate statements" and "inaccurate terminologies" represent flaws of inaccuracy i.e., flaws in interpretation of results and inaccuracy of statements. Both of these technical issues are concerns pertaining to the field of discourse. They occur in proportions of 29.5% and 23.7%, respectively, and have a considerably high rejection proportion in 31.7% and 21.2% of RRs in which they appear. This suggests such flaws are objectionable in the context of rubber RA publication and pose risks that may lead to an outright rejection of the rubber RA in some cases. This is because inaccuracy in interpretation of results and statements lead to inconclusiveness of results or otherwise indicate a bias. Ominously, this flaw occurs in all 13 rejected rubber RAs within the dataset. In comparison, issues of "inaccurate terminologies" involve a lower degree of potentially threatening consequences towards achieving publication. Depending on the extent of weaknesses within the rubber RA in relation to "inaccurate terminologies", inclusion of a definition or a suitable replacement to avoid misleading the reader may suffice to comply with reviewer feedback. Rectifications for this issue is therefore straightforward and usually involve minor revisions with an exception for the rubber RAs that are unclear overall, lacking explanations for many of the terminologies.

The metalinguistic code "consistency of information presented" reflects a field related perspective and the author's obligation to ensure careful preparation in submitting a rubber RA for publication. An overall proportion of 15.1% for this code demonstrates a considerably lower level of concern within the dataset with a recommendation for rejection in 28.6% of these RRs.

Awareness on errors and inconsistencies in the rubber RA, especially in correlating both method and results of the study are important.

The code “omission of unsupported data or discussion” indicates an issue with inclusion of information or lack of it, or an irrelevant discussion with no specific reference to findings reported or its interpretation. It appears in a similar 15.1% of RRs. A potential threat due to this metalinguistic flaw is apparent in 14.3% of these RRs recommending rejection of rubber RAs. It does not however threaten publication of the rubber RA as an independent metalinguistic issue, therefore allowing for compliance with reviewer recommendations involving minor revisions.

The codes associated with disparities in objectives, findings and literature as part of the rubber RA are “unrelated objectives and findings” and “contrasting data and literature”. They are relatively rare, appearing at only 8.6% and 7.2%, respectively, within the dataset. Although the frequency of occurrences and overall proportions of both codes in RRs are low, these issues pose serious threats towards gaining acceptance for publication due to disparity in claims. The peaks in rejection proportions for these codes at 50% and 90% (Figure 6.2), indicate the severity of both these concerns relative to other issues in this category. Instances in RRs involve results that do not correspond with the methodology or vice versa, where the objectives are not in tangent with the methodology and results. A conditional acceptance upon revision was applicable to 50% of rubber RAs with “unrelated objectives and findings”, involving specification of details on either methodology or results. By comparison, this decision was only applicable to 10% of rubber RAs with “contrasting data and literature”. When we examine closely the instances that occurred in the dataset, it is clear this metalinguistic issue poses a substantial threat to gaining conditional acceptance for publication. Serious concerns involve shortcomings in the experimental set up, a lack of a control experiment and flaws in theoretical treatment of the data. Further cases involve seemingly unreliable data which are inconsistent with the SI units quoted, implying imprecise results. Finally, there were also instances where sets of statements on the data and literature are contradictory, with authors seemingly attempting to justify an ideal fit of data to an equation that is unwarranted and clearly false.

The code “equations, abbreviations, formulae and units” are modal concerns that indicate flaws in representation of information. RRs indicate a proportion of 30.9% of errors with equations, abbreviations, formulae and units overall. Although 20.9% of rubber RAs with this code result in a potential rejection citing either one or more of these issues, reviewers either

provide feedback for amendments otherwise requesting for specific definitions in most cases. Hence as an independent issue it does not contribute exclusively towards an outright rejection.

The final metalinguistic code in the category of technical issues is “impact and value of publication”. It concerns the tenor of discourse on engagements between participants, i.e. author and readers (including editors and reviewers). While a 13% overall proportion of this code within the data set implies a low frequency, Figure 6.2 shows a peak in the rejection proportion affecting 38.9% of rubber RAs due to possession of neither scientific nor practical value. That authors understand this issue and its potential threat towards achieving publication is crucial. Flaws in this area are a point of contention because of possible rejection due to the insignificance of the study and/or findings reported. For example, misinterpretation of a major environmental pollutant as a biocompatible alternative invalidates the conclusion (Table 6.3). Another rubber RA quotes and discusses the author's important publications which may be interesting but-unsuitable for journal publication. In others, applicability is an issue. Some rubber RAs address an important area of research. However, both the experimental work and results are unreliable while the interpretation is superficial and confusing.

To summarise, in the analysis of metalinguistic codes that reflect technical issues relating to field, mode and tenor of discourse in the contexts of discussion above, all codes involve specific instances among RRs that can involve potential rejection. The highest proportion of occurrence in this semantic category is “justification of results” with a direct correlation to the field of discourse as well as a significant aspect of scientific writing. It is clear that awareness and understanding of each metalinguistic consideration, specifically the variable of rejection proportions and peaks in Figure 6.2 for “contrasting data and literature”, “unrelated objectives and findings” and “impact and value of publication” among others will contribute positively towards securing success in achieving publication.

6.2.3 Functional Issues

Metalinguistic codes under the semantic category of functional issues reflect language weaknesses, generally in correlation with aspects of field and to a lesser extent the mode and tenor of discourse. The majority of reviewer feedback indicate functional issues relating to the field of discourse are critical, however, all codes represent a noteworthy impact towards achieving success with publication. As with the previous discussion of structural and technical semantic categories, metalinguistic code listing, definitions and corresponding data extract samples are similarly incorporated in Table 6.5 to represent functional issues within the dataset.

Codes	Definition	Data extract sample
Grammatical errors	issues in language proficiency, in particular instances of badly worded or constructed sentences	<p><i>What do they mean with "the curing reaction will become easily"?</i></p> <p><i>The FR method is described as "unstable". It is not evident that the requirement for "instantaneous rate values" renders the FR method "unstable". Perhaps "unsuitable" was intended rather than "unstable", although terms such as "more difficult" or "subject to greater error" would be more appropriate.</i></p>
Coherence	Problems with coherence, either require substantive rewriting otherwise involve omission of a definite or indefinite article as well as inaccurate tense of verbs in the methodology and discussion of results	<p><i>This paragraph, unlike the remainder of this section, uses the present tense. For consistency, "is" should be replaced with "was"</i></p> <p><i>"its capability on variable release behaviour of fertilizer" should be "its capability to act as a variable release fertilizer"</i></p>
Cohesion and sentence fragments	issues involving misuse of pronouns and deictic words in reference to a previous mention	<p><i>"when it is leached" should read "when they are leached"</i></p> <p><i>"examination gloves as it exhibits " should read "examination gloves as they exhibit"</i></p>
Missing information	Lack of specificity in writing	<p><i>All the films met the minimum specifications of a nitrile examination glove in terms of tensile strength and force at break (please show the minimum specifications), except the 0.05 mm nitrile films containing 1 phr of zinc peroxide dispersion.</i></p> <p><i>The films also maintained its tear strength properties after being subject to ageing conditions. Please show the retention of the physical properties, not the actual properties, after ageing so that reader can see the effect clearly</i></p>
Too speculative	the lack of clarity in writing	<i>Those familiar with ENR will probably assume that the epoxide level quoted is mole% but the basis for the content should be stated explicitly either as mole% or wt%</i>
Subjective discussion	impossible to fully understand the RA due to subjectivity in writing	<i>The meaning of "a standard solution" is unclear. Does it mean the 100 mg/L "standard solution" referred to in the preceding paragraph or to the 25 ppm solution at a pH of 5.2-5.5? Later discussion suggests the latter. It would be better to state the concentration of the solution here to avoid confusion.</i>
Omission of trivial and redundant information	identification of superfluous details and irrelevant	<i>The hardness of an EPDM-compound can simply be calculated/predicted on basis of the phr's of carbon black, mineral filler and oil being used in the formulation. There are simple calculation formulas in</i>

	discussion in the context of the RA	<i>use. That the hardness increases (Figure 1) with filler loading is therefore trivial</i>
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Table 6.5: Functional issues – codes, definitions and data extracts

Table 6.6 then displays a similar quantification of variables for each code listed in the respective columns according to Equations 1 and 2, as per Tables 6.2 and 6.4 above. Discussion of results from this semantic category follows, with reference to the graphical representation of both variables in Figure 6.3.

Functional issues	Number of RRs comprising each code (a)	Number of RRs recommending rejection of rubber RAs comprising each code (b)	Proportion of RRs comprising each code (c)	Proportion of RRs recommending rejection of rubber RAs comprising each code (d)
Grammatical errors	90	13	64.8%	14.4%
Coherence	46	6	33.1%	13.0%
Cohesion and sentence fragments	31	6	22.3%	19.4%
Missing information	49	12	35.3%	24.5%
Too speculative	33	13	23.7%	39.4%
Subjective discussion	5	1	3.6%	20%
Omission of trivial and redundant information	14	7	10.1%	50%

Table 6.6: Coding results and proportions of structural issues in RRs

As we can see from Figure 6.3 below, the highest overall proportion of weaknesses in this category is “grammatical errors”, accounting for 64.8%. Depending on severity of this flaw within a particular manuscript, the editorial decision outcome may vary considerably between that of a conditional acceptance subject to major or minor revision or that of an unconditional reject or resubmit. This is confirmed by a rejection chance in only 14.4% of these RRs due to issues in language proficiency, in particular grammatical errors and instances of badly worded or constructed sentences.

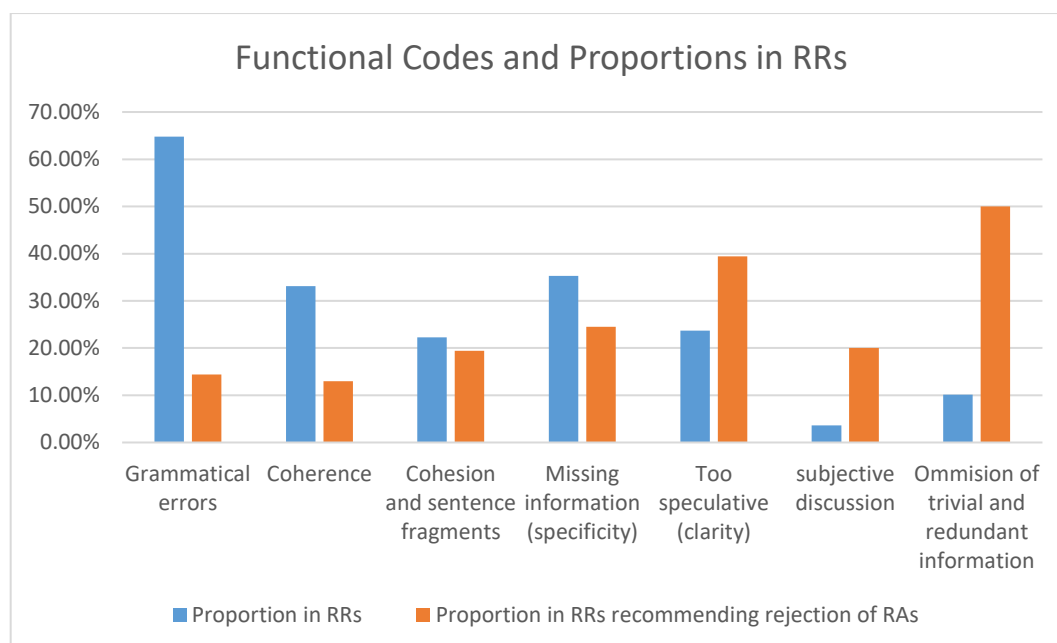


Figure 6.3: Functional codes and proportions in RRs

Other metalinguistic codes of language proficiency include “coherence” and “cohesion and sentence fragments” which involve overall proportions of 33.1% and 22.3% in RRs, while 13% and 19.4% of these reports recommend rejection for both writing issues, respectively. The latter proportions indicate a conditional acceptance for more than 80% of rubber RAs with both issues involving predominantly conditional acceptances subject to major revisions, specifically for the style of writing of the RA.

Some codes reflect logical flaws that imply speculation, i.e. a lack in scientific vigour in supporting a particular fact, in either statements or discussions. These codes are “missing information”, “too speculative” and “subjective discussion” in reference to omission of key details in the context of communicating the science which relate to the manner of reporting materials, methods and results to allow for better interpretation, accordingly. “Missing information” accounts for 35.3% in overall proportion of RRs, generally lacking specificity in writing, involving a rejection proportion of up to 24.5% among these RRs. The code “too speculative” relates to the lack of clarity in writing, accounting for 23.7% in overall proportion of RRs with a significant rejection proportion in 39.4% of reports indicating this issue, while that of “subjective discussion” involves a minimal 3.6% (i.e. 5 RRs) and only 1 of these RRs (20%) recommending rejection of the rubber RA. In some cases it is impossible to fully understand the rubber RA due to lack of explanation and information which in turn confuses the reader. Reviewers resort to requesting for specific information concerning these issues to

avoid any source of confusion in the mind of readers. These metalinguistic codes however involve higher proportions of conditional acceptance upon further clarification in 75.5%, 60.6% and 80% of the rubber RAs, respectively.

The code “omission of trivial and redundant information” represents identification of superfluous details and irrelevant discussion in the context of the rubber RA, particularly pertaining to illustration and interpretation of results in direct correlation with the field of discourse. This metalinguistic issue occurs in only 10.1% of RRs requiring omission of either discussion or data in the rubber RA. Potential rejection applies to 50% of these rubber RAs, reflecting careless preparation as a whole together with a combination of other metalinguistic issues in the rubber RA. Other instances within the dataset however do not indicate a serious threat towards publication solely due to this issue, owing to subjective interpretations in the rubber RA involving only minor revisions in some cases.

In sum, the semantic category of functional issues reveals important concerns of language and writing, that of Scientific English style and genre expectations particular to rubber RA publication. The codes “grammatical errors” and “too speculative” occur consistently in all 13 rejected rubber RAs within the dataset. Weaknesses in these aspects can thus lead to potential failure in achieving publication depending on the level of severity of these errors in the rubber RA. Hence, awareness and understanding of these elements are essential for success at the macro generic level. The discussion above, together with rejection proportions in RRs imply the weightiness of all codes over proportions of occurrences. Although a particular metalinguistic code does not seem prevalent in the present dataset, its realisation and potential threat towards publication as well as association with the registerial variables of field, tenor and mode are relevant.

6.2.4 Key Facts from Coding of RRs

The semantic categorisation of metalinguistic codes are directly proportional to writing issues that require awareness and improvement. If we revisit the above discussion of the coding results, we find that the highest proportions in RRs from each category were “grammatical errors” (functional issue), “methodology” (structural issue) and “justification of results” (technical issue). These issues are the most problematic areas in scientific writing for rubber RA publication as a result of the dataset coding analysis. We can identify the nature of these flaws in view of code definitions and relevant examples of data extracts together with their high proportions in RRs and ultimately upon juxtaposition with results of the survey feedback.

The highest rejection proportions of metalinguistic codes in RRs were “discussion of previous findings reported” and “reporting results optimally” for the category of structural issues in reference to the Introduction and Results section of the rubber RA. For technical issues, highest rejection proportions were “contrasting data and literature” and “unrelated objectives and findings”. While these occurred at much lower proportions they were nevertheless noteworthy considering most RRs recommending rejection explicitly mention them. In the category of functional issues “too speculative” had the highest rejection proportion among others, and reflects a notable risk in achieving publication. Further, metalinguistic issues from these semantic categories, which occur unfailingly in all 13 rejected rubber RAs within the dataset, are “methodology”, “inaccurate statements”, “grammatical errors” and “too speculative”.

Apart from the abovementioned semantic categories and corresponding metalinguistic codes that distinguish specific problematic writing issues, RRs also include feedback on the interpretation as well as presentation and style of the rubber RA. Issues and weaknesses in association with interpretation of the rubber RA affect the tenor of discourse as it concerns the author’s inability to engage in writing with potential readers. Flaws with presentation and style of the rubber RA in turn involve the mode of discourse and reflect lack of mastery in modality in the presentation of various sections of the RA, even when the study is both relevant and applicable. Both these concerns may contribute to either rejection or a conditional acceptance subject to major revisions when the interpretation is unclear or not warranted by data while issues with presentation and style confirm the importance of clear scientific English. This condition applies to rubber RAs that address a relevant scope of research while appearing to contain sensibly sound approaches and results. Inaccuracy in communicating details and language errors in scientific writing lead to issues with overall presentation and interpretation of the manuscript, and in turn, will eventually affect participants of the overarching discourse event, i.e. the author, editor and reviewers (as the initial evaluative readers). This correlates with the dialogic notion of the rubber RA publication macro genre, in that its aim is to see a quality publication reach its specialist audience.

6.3 Coding of Authors’ Responses to Reviewers (ARR)

Semantic coding for the core genre of ARR employs metalinguistic classifications with alternative pathways to successful genre expectations and weaknesses that may lead to a circuitous route towards publication (or lack of it). The dataset includes revision of 41 rubber

RAs as part of the macro stage of Conclusion together with 39 ARR, which comprise six distinct metalinguistic classifications that relate to levels of mastery, adequacy as well as failure of tenor relations. Note that an ARR serves as a rejoinder to RRs and the editorial decision on the rubber RA. In addition, it plays a significant role in extending the dialogic discourse event between author, editor and reviewers leading to either final acceptance for publication or a Re-iteration of the macro stage of Evaluation (Chapter 5, section 5.7). The latter option will either contribute to a potential dialogue in the event of a second conditional acceptance subject to either major or minor revision or lead directly to success of the macro generic goal.

ARRs predominantly reflect the tenor of discourse in reference to the association of role relationships between authors and reviewers as participants of the discourse event. Semantic classification of the genre within the dataset comprises six metalinguistic codes: “comprehensive”, “justification only”, “negative justification”, “acknowledgment only”, “unclear response” and “non-response”. Table 6.7 lists each of the codes and their corresponding definition as well as data extract samples.

Codes	Definition	Data extract sample
comprehensive	compliance with expectations and requirements of the genre	<i>First of all, we would like to thank the Editorial Board of the Journal of Rubber Research for giving us the chance to share our research achievements.</i> <i>Comment 1: Sequencing of amplified rDNA-ITS fragments should be described in Methodology.</i> <i>Response 1:</i> <i>As your suggestion, the paragraph describing the methodology for sequencing of the amplified rDNA-ITS fragment was included in the Materials and Methods section (lines 98-101).</i>
justification only	Responses that lack the element of acknowledgment in thanking reviewers and editors for their feedback however clearly indicating amendments to the revised RA, as well as addressing all reviewer comments	<i>Reviewer #1: I recommend this paper for publication, the work is original and well presented. However I would ask the authors to add an extra figure containing the alignment of the HbEg 1-12 family genes as coding sequences in support and before of the protein motives distribution of Fig 1.</i> <i>Finally some suggestions or speculation should be given in correlating the variety of isoforms based on the diversity of the protein motives and their physiological role in relation to the type of tissue the isoforms have been found.</i> <i>Reply: An extra figure containing the alignment of the coding sequences does not add further resolution or provide extra information to the</i>

		<p>current manuscript. Figure 1 is a simplified yet concise version of the translated coding sequences and turns out to be very informative. Additional discussion has been added at Line 141-151 and 184-193 explaining the diversity of isoforms in relation to the relative expression level of each isoforms in the respective tissue tested.</p>
negative justifications	<p>author does not comply with reviewer suggestions or provide practical justifications instead reacts with destructive criticism towards reviewers</p>	<p><i>Reviewer #3:</i> <i>Authors have not substantially answered the queries to improve the quality or representation of the data. The explanations given by authors for many queries is out of context, defiant, irrelevant and does not improve the quality of the manuscript. This manuscript does not meet the quality of international standards as the data is preliminary, does not have significant improvement over similar previous publications. This reviewer was considerate to give an opportunity to the authors to enhance the quality but clearly, the revised manuscript has raised more questions than it was answered and authors will not be able to address them all. Hence it is recommended not to consider for publication.</i> <i>Response: The authors feel this reviewer lacks understanding on the subject matter, and hence the reason for the vague remarks.</i></p>
Acknowledgment only	<p>a simple thank you note to reviewers and fail to address specific reviewer recommendations or explain improvements to the RA</p>	<p><i>Special thanks to you for your good comments.</i></p>
unclear responses	<p>vague responses, not representative of all issues and concerns</p>	<p><i>This is a nice piece of work, but the paper could have been written more concisely. There are quite a large number of minor grammatical errors which do not change the meaning, but make it a little difficult to read. One error that needs to be corrected is the use of 'colloid' in place of collide on page 6.</i> <i>Thank you for your compliment regarding the paper. Kindly informed that i have done the necessary amendments.</i></p>
non-response	<p>overall non-compliance to the genre expectations</p>	

	which is unacceptable	
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Table 6.7: ARRs - codes, definitions and data extracts

Table 6.8 consists calculations of the single variable in reference to Equation 3 (section 3.6, Chapter 3), i.e. $(e)/41*100 = (f)$; where (e) is the number of ARRs comprising each code and (f) is the corresponding proportion of codes in ARRs.

Codes	Number of ARRs comprising each code (e)	Proportion (%) of codes in ARRs (f)
Comprehensive	13	31.7%
Justification only	5	12.2%
Negative justifications	6	14.6%
Acknowledgment only	12	29.3%
Unclear responses	3	7.3%
Non-response	2	4.9%

Table 6.8 Coding results and proportions of codes

Figure 6.4 further illustrate proportions of all these metalinguistic codes pertaining to ARRs in view of patterns within the dataset prior to a discussion on emergent trends.

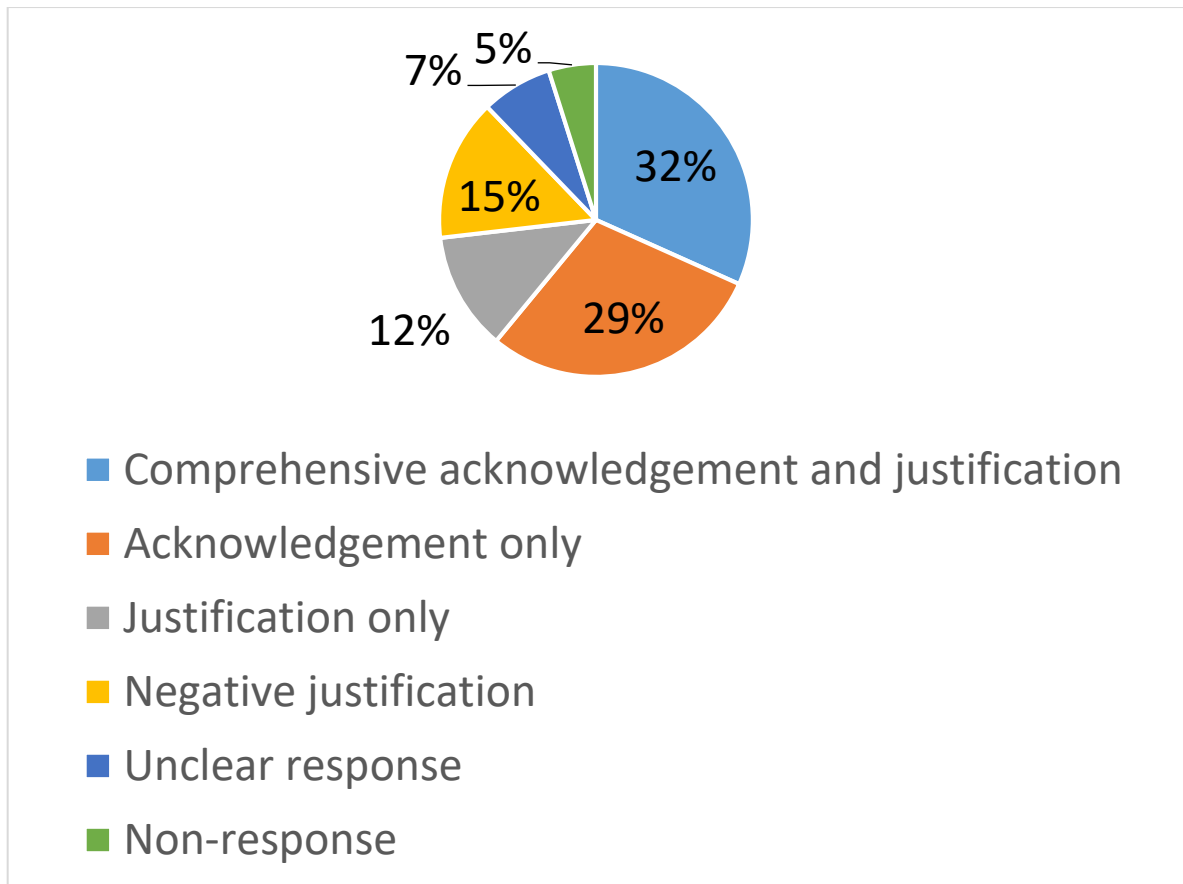


Figure 6.4: Proportions of codes for ARR

The semantic coding analysis reveals a mastery in 31.7% of responses involving comprehensiveness, and a further 12.2% of responses for the important criterion of “justification only” in responding to reviewers. Therefore, a majority, 56.1% of ARRs in the dataset do not comply with generic expectations. This leads to a problematic genre pattern in some cases. The code “comprehensive” represents responses that indicate a mastery of tenor relations in reference to authors who comply with expectations and requirements of the genre. They do this by acknowledging reviewer feedback and addressing in an all-encompassing manner concerns arising from the suggestions and comments by reviewers and the Editor. Responses with this code address reviewer comments by integrating elements of justification, elaboration and clarification of improvements to the revised RA or otherwise articulating specific rationale for non-compliance to recommendations (Table 6.7). Of the 41 rubber RA revisions, 31.7% of responses to reviewers represent this code. This code realises ideal genre pattern and potential success of the macro generic goal so the proportion of a third of responses within the dataset is a significant confirmation of its lacking application in practise.

The classification “justification only” represents an adequate level of tenor relations. This code implies authors clearly indicate amendments to the revised RA, as well as address all reviewer comments. However, 12.2% of responses with this code lack the element of acknowledgment in thanking reviewers and editors for their feedback. A further 14.6% of responses involve “negative justifications”, which often lead to a problematic outcome and possible re-iteration of the stage of Evaluation, or even Rejection of the Revised RA. “Negative justifications” is when the author does not comply with reviewer suggestions or provide practical justifications, and instead reacts with destructive criticism towards reviewers (Table 6.7). On a positive note, “justification only” adequately realises the genre and hence allows for a smooth progression along the micro stage of Revision.

The code classified as “Acknowledgment only” relates to failure of tenor relations for this genre. These responses comprise a major proportion in 29.3% of author responses with a simple thank you note to reviewers while failing to address specific reviewer recommendations or explain improvements to the rubber RA.

In 7.3% of cases, the responses were vague, justifying the code of “unclear responses” which are not representative of all issues and concerns in the RRs. Failure to respond comprehensively implies non-response to some extent hence validating failure of the genre expectations. This represents a potential threat which leads to a problematic route towards acceptance, in most cases involving a Re-iteration of the macro stage of Evaluation.

The final metalinguistic classification of ARR is that of “non-response”. This occurs when revised RAs are submitted with no further mention or reference to feedback from both editor and reviewers, and confirms an outright failure of tenor relations. This code represents only 4.9% of responses within the dataset. Both classifications of “Acknowledgement only” as well as “non-response” indicate an overall non-compliance to the genre expectations. It is unacceptable from my insider perspective as an editor and is problematic for progression of the rubber RA along the macro generic pathway. In any case, possibility of a technical check failure during Re-evaluation in the macro stage of Conclusion (section 5.7, Chapter 5) will result in the Editor returning the submission for further amendments, i.e. incorporation of ARR. Failure to do so will lead to a decision to re-iterate the macro stage of Evaluation in the case of unclear responses.

The dataset reveals variations in ARRs that reflect both an ideal and problematic genre pattern, thereby impacting on the macro generic progression towards publication (or lack of it),

accordingly. Responses reflecting “negative justification”, “acknowledgement only” and “unclear response” that lead towards a problematic rubber RA publication macro genre pattern due to failure of tenor relations within the core genre of ARR are a result of this semantic metalinguistic coding analysis. These instances therefore reflect a point of contention in posing a potential threat towards publication while significantly affecting the rubber RA’s progression along the macro generic pathway.

6.4 Summary of Semantic Coding Analysis

To summarise, semantic coding of the dataset and pattern analysis reveals semantic categories comprising metalinguistic issues that contribute towards a better understanding of expectations pertaining to the rubber RA genre and the overarching discourse event, i.e. the publication macro genre. Importantly, these considerations play a role *prior to* the macro stage of Initiation and in the macro stage of Conclusion (Chapter 5, sections 5.5 and 5.7) of the macro genre, i.e. before the obligatory elements of Submission and Revision. We can conclude that the dataset is representative of practical instances and weaknesses in field, tenor and mode of discourse that each have an effect towards securing the likelihood of success with publication. The focus on variables of overall proportions in RRs and ARRs, in combination with proportions of RRs recommending rejection of rubber RAs for each metalinguistic code, indicate severity of these issues in view of instances within the dataset as well as their potential threat to publication.

From my insider perspective, metalinguistic issues that emerge from the analysis of the semantic coding of RRs and ARRs reveal significant considerations. These include the most problematic areas in scientific writing for rubber RA publication as a result of the dataset coding analysis whereby highest proportions in RRs from each category were “grammatical errors” (functional issue), “methodology” (structural issue) and “justification of results” (technical issue). Of these, “grammatical errors” and “methodology” occur unfailingly in all 13 rejected rubber RAs within the dataset. Peaks in rejection proportions also involve the following metalinguistic issues of “discussion of previous findings reported”, “reporting results optimally”, “contrasting data and literature”, “unrelated objectives and findings” and “too speculative”. Further, an alarming proportion of 56.1% among ARRs within the dataset that reflect noncompliance to this core genre indicate specific points of contention pertaining to rubber RA publication.

The variation in genre analysis of RRs and ARRs as reported in literature have been discussed with respect to genres within the RA publication discourse event (Chapter 2, section 2.8). Results of the semantic coding analysis therefore contribute to the expansion of field knowledge in this regard and serve to improve and maintain the journal quality from an editor's perspective, as indicated by Belcher (2007, p.4). The strength of findings reported in this chapter is on taking the 'road map' supplied in the previous chapters to identify the whys and wherefores of acceptance or rejection. In particular, the results provide evidence that it is not just the experiential, but also the interpersonal that leads to success. In short, treating metalinguistic issues within the structural, functional and technical semantic categories in combination with producing a comprehensive response to reviewers outline the generic expectations in such scientific writing for publication. This finding not only contributes to the field of (macro) genre analysis but more practically has the potential to expand existing knowledge while creating new knowledge, awareness and understanding. For instance, such information can be included in guidelines or training aimed at potential authors. Application of the tools of genre to explicitly create a macro-genre map, followed by the semantic coding of the core genres according to previously discussed genre theories by Martin (1992) thus support novelty of these findings and serve as a way to understand the whole discourse event.

CHAPTER 7

Survey on Scientific Writing and RA Publication

7.1 Introduction

This chapter discusses understanding and awareness among authors, in association with scientific writing and RA publication as a result of an online survey. The formulation and design of this survey, including its preparation and piloting, and distribution among local Malaysian scientists in research and academia was introduced in Section 3.7 of the Methodology Chapter. Here, the issues plaguing authors, in particular Malaysian scientists as participants of the survey represent knowledge gaps in reference to experiential perspectives on RA writing and publication, are discussed. Feedback on questions about specific issues will be used to demonstrate how a quality paper eventually gets published. Quantification of the survey results reveals emergent categories indicating levels of awareness among survey participants that are consistent with or otherwise contradict results from the case studies, macro genre and semantic coding analyses in Chapters 4, 5 and 6, respectively.

A subsequent qualitative analysis of participant responses regarding challenging aspects of scientific writing, publication and reviewer feedback reveals author specific concerns. Importantly, interpretation of these results correspond to registerial variables of field, tenor and mode of discourse in supporting or contradicting results of semantic categories arising from the metalinguistic coding of the dataset. Integrating findings from each phase of this research by means of juxtaposing results from the four phases of this study will reveal levels of awareness and understanding on metalinguistic aspects, grammatical tools and macro generic features pertinent to scientific writing. It is the integrated results that leads to the significant finding of this research about boundaries of the macro genre and contribute to achieving success with RA publication.

7.2 Participant Demographics

Assessment of participant demographics enables consideration and selection of potential variables to analyse survey feedback. Demographics of the 60 survey respondents include details on age, professional affiliations, proportionality of scientific writing in their work

routine, publications in peer reviewed journals (as a main author and co-author, respectively), postgraduate supervisions and manuscripts reviewed for journals. These criteria will provide insights and validate further evaluation of survey feedback on levels of awareness and understanding with regards to metalinguistic and macro generic features. The following figures present information on the above aspects and a discussion on the potential limitations in participant responses.

Respondent age categories in Figure 7.1 below, may be consistent with information on practices and experiences in scientific writing and RA publication.

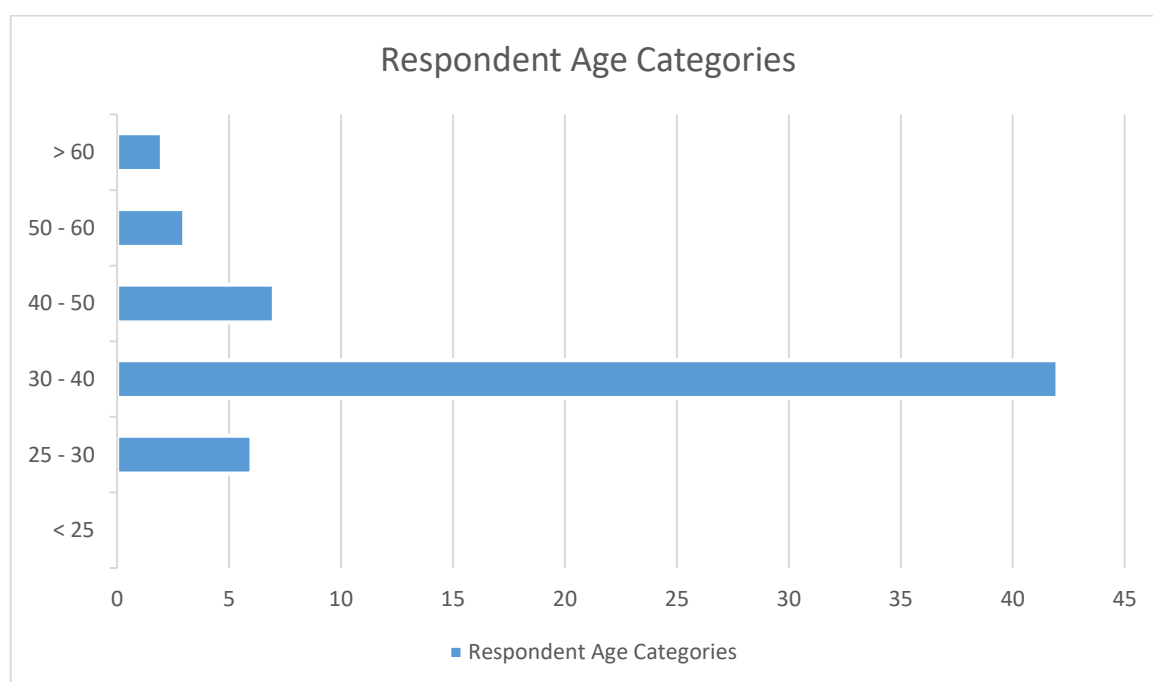


Figure 7.1: Age categories of survey participants

The majority, representing 42 participants (70%), are in the 30 - 40 age category. There are 7 participants (11.7%) in the 40 - 50 category and 6 participants (10 %) in the 25 - 30. Furthermore, there are only 3 (5%) and 2 (3.3%) participants in the upper age categories of 50 - 60 and > 60, respectively, and there were no participants are <25. The figures indicate a significantly lower percentage of prospectively senior and junior scientists, which are also directly proportional to the age categories of researchers at the MRB. Hence the group of participants in general represent a sample of scientists who have a particular number of years of experience and are potentially capable of actively pursuing RA publication.

From this sample, note that most participants acknowledge a higher proportion between 30 – 40% or more of scientific writing in their work routine as shown below in Figure 7.2.

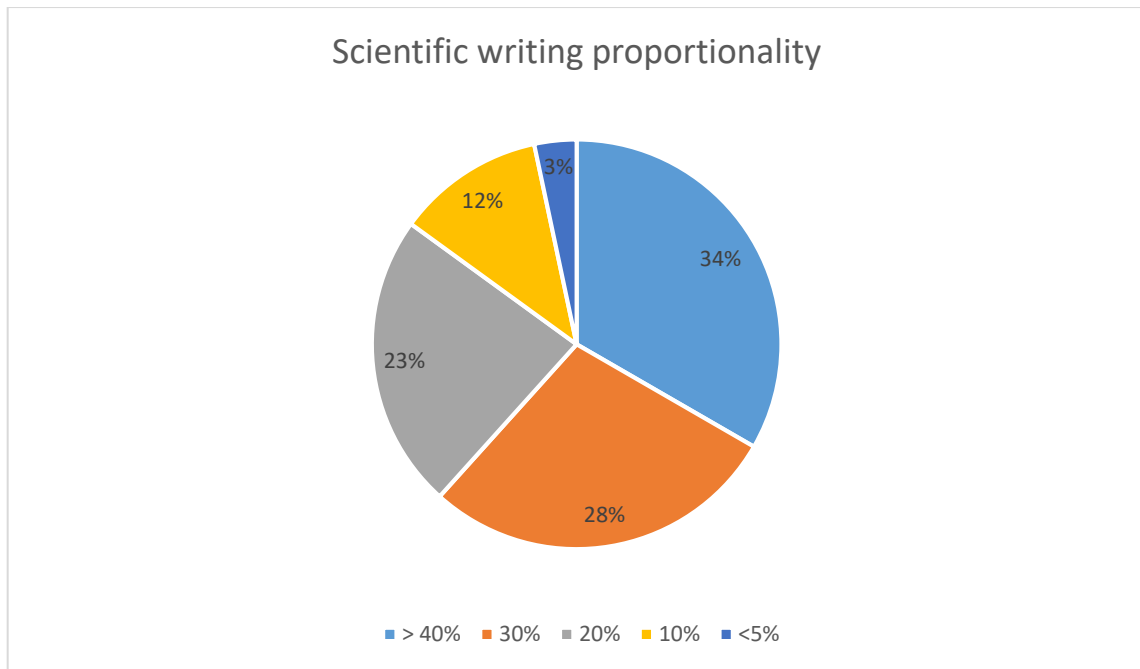


Figure 7.2: Survey participants' proportionality of scientific writing in their work routine

Active engagement in scientific writing is a significant aspect of the work routine (> 40%) among one third of the participants (20). 17 participants, representing almost a third of the total acknowledge 30% of their work routine involves scientific writing, while 14 participants, accounting for a quarter of the respondents acknowledge that only 20% of their work routine comprises scientific writing. On the lower end of this spectrum, under a sixth of the total respondents (9) only dedicate 10% (7) and < 5% (2) of their routine at work to scientific writing.

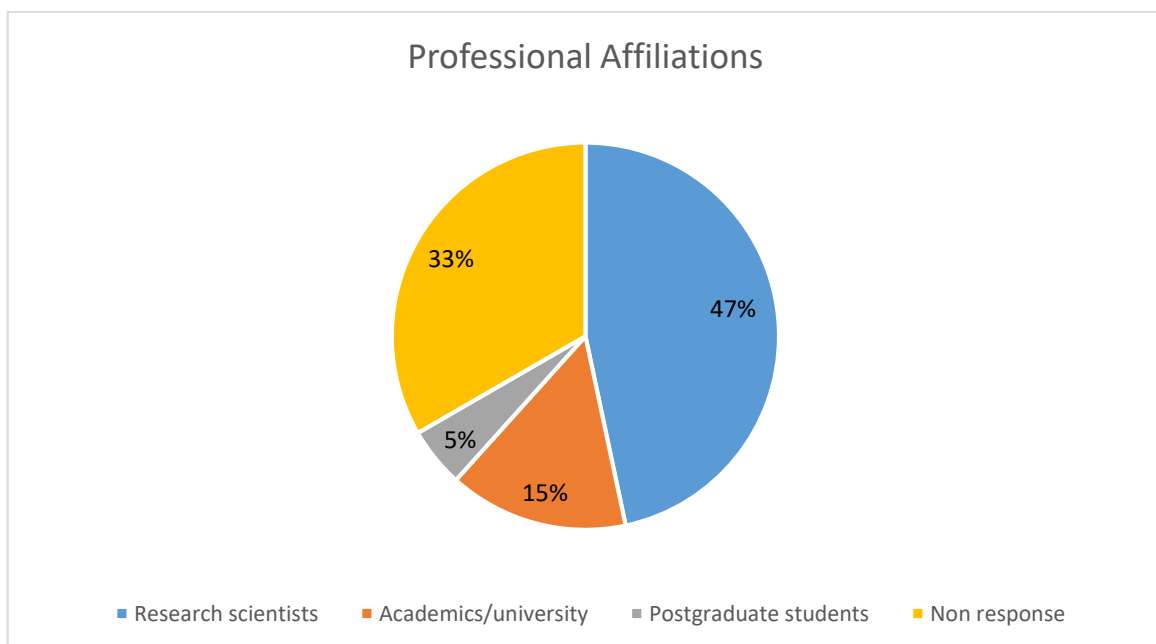


Figure 7.3: Survey respondents' professional affiliations

Survey feedback on participant professional affiliations, which provides information on career background, was received from under 70% among total respondents (Figure 7.3). The lack of response from approximately a third of participants (20) is potentially a limitation affecting the comprehensiveness of the assessment of cultural practices with respect to professionalisation categories. However, responses indicate that a majority, i.e. 28 participants represent research scientists (47%), while a minority, 9 respondents (15%), are university academic professionals, and a further 5%, 3 postgraduate students. Given that the distribution of this online survey questionnaire is to a pool of scientists in research and academic institutions locally, non-response participants are very likely to be participants from the 3 identified categories. Hence, despite the non-responses, we can be confident that the results of all survey responses reflect the association of overall stances on scientific writing and RA publication to career backgrounds in academia or as research scientists.

The following demographic categories are indicative of participants achieving success in RA publication as a main author or co-author. Figure 7.4 below represents the number of publications each participant has achieved in peer reviewed journals as main author of the RA. A total of 11 participants (18%) report no success with RA publication, a majority of 32 participants (53%) achieved publication of 5 RAs or less, and a sixth of the total, and 10 participants (17%) have publications of 5 to 10 RAs. 7 participants (12%) represent prolific writers with over 10 RAs published as main authors. From a demographic perspective, these results indicate that a majority of survey respondents are familiar with the processes of scientific writing and RA publication, with only over a sixth of the total lacking success with the goal and social purpose of the overarching discourse event.

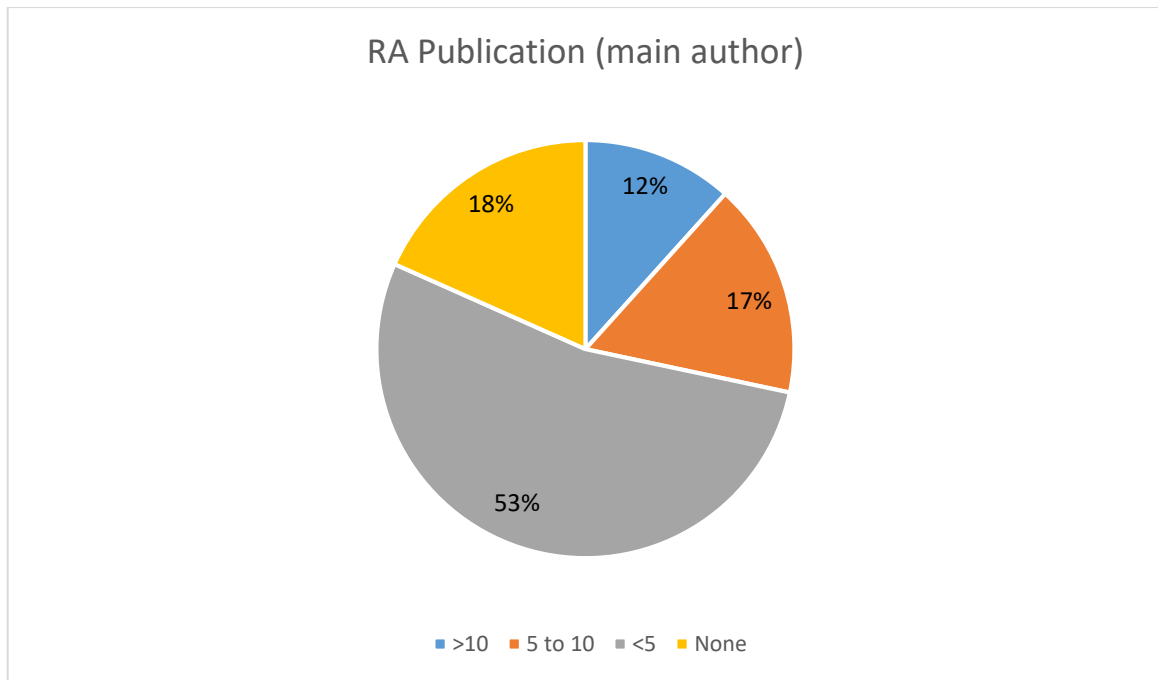


Figure 7.4: Results on survey respondents (as main author) achieving success with RA Publication

In probing success with RA publication among survey participants further, an inference of their contributions as co-author were taken into account accordingly (Figure 7.5). Similarly, the results reveal that majority (53% or 32/60) of the participants acknowledged success with fewer than 5 RA publications, while only 18% (11/60) achieved success with 5 to 10 RA publications and 10% (6/60) of the participants reported success with 10 or more RAs published. Similar to the results in Figure 7.4, 11 participants (18%) had no publications as co-authors and represent the group with a low level of awareness and understanding on the processes of scientific writing and RA publication, demographically.

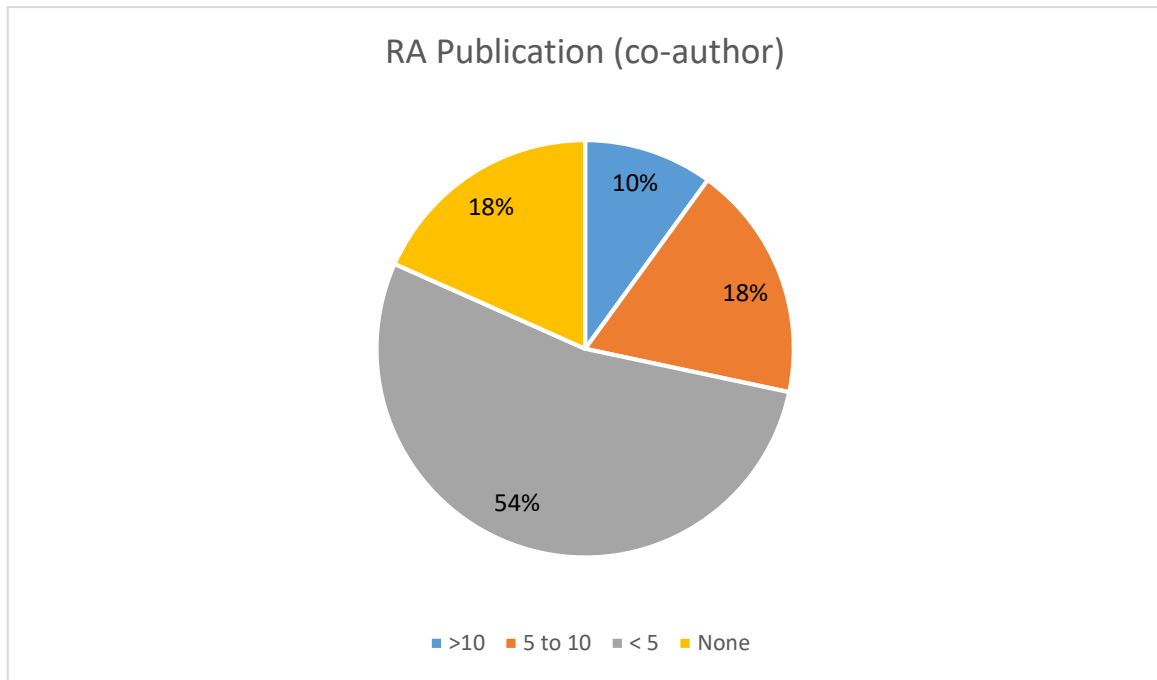


Figure 7.5: Results on survey respondents (as co-author) achieving success with RA publication

The final categories of participant demographics are the respective roles as postgraduate supervisors and manuscript reviewers for journals. In that regard, Figures 7.6 and 7.7 below map out these potential variables to validate conclusions from the survey results. Both experience as a postgraduate supervisor or manuscript reviewer, are part of the professional growth curve that directly contributes towards realisations in the context of scientific writing and RA publication processes. These experiences also reflect an individual's engagement with the discourse community in view of academic or research affiliations.

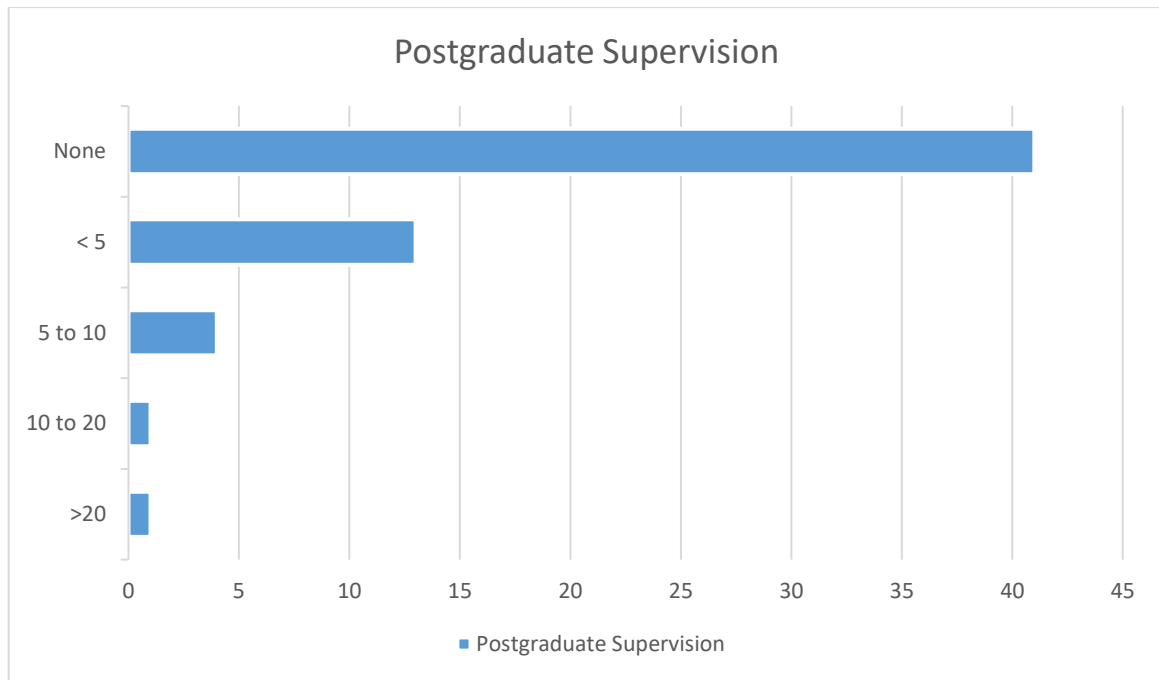


Figure 7.6: Experience in postgraduate supervision among survey participants

Experience of postgraduate supervision should be consistent with professional affiliations of survey participants as academics or researchers. However, the results above indicate that a majority of respondents have no experience in this respect. The trend reflects a negative linear relationship where with an increase in the count for postgraduate supervision, there is a decreasing number of survey participants. Almost 70% (41 participants) have no experience as a supervisor, just over 20% for 13 participants have had under 5 students, and a minority of 4 participants have supervised 5 to 10 postgraduate students. Only 1 participant confirmed supervision experience of 10 to 20 students and another, who had more than 20. The latter lower proportions reflect those that chart participants' affiliations as researchers and university academics. Results in Figure 7.6 indicate a strong possibility that majority among participants are with research institutions and a smaller percentage are serving at universities.

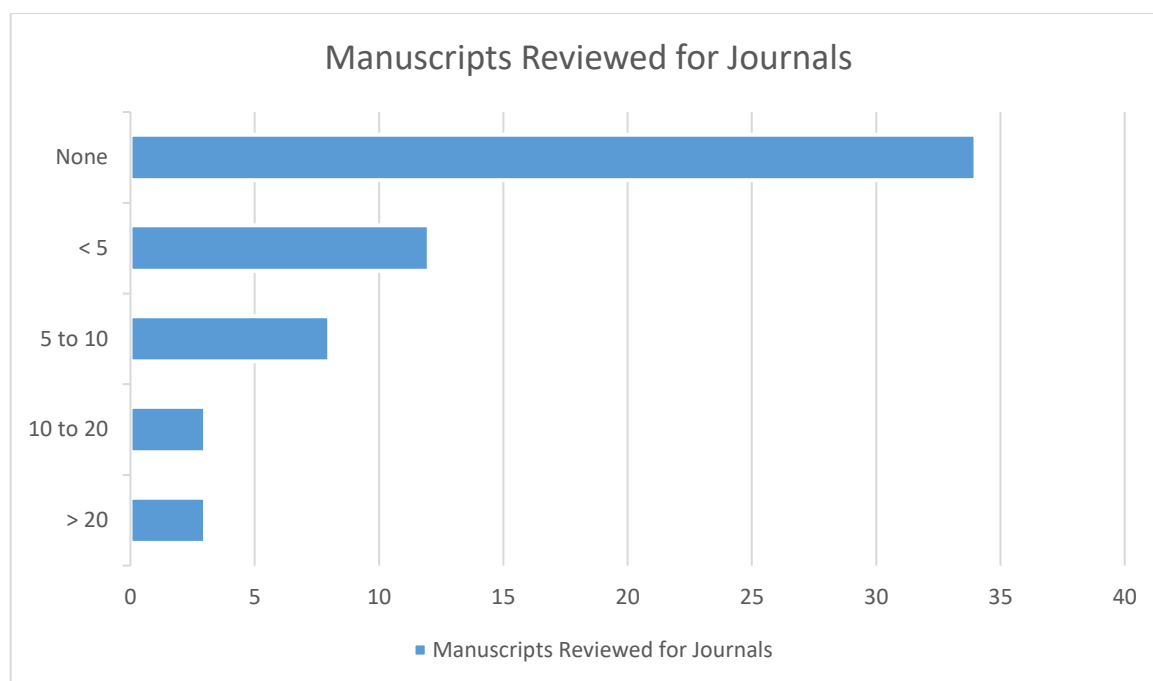


Figure 7.7: Results on manuscript reviews by survey participants

Experience with reviewing manuscripts for a journal provides the opportunity for scientists to be aware of the major points of contention in the overarching RA publication macro genre from a top down perspective, as a reviewer's standpoints on feedback and suggestions for improvements of the RA are made from an evaluative end in publication consideration. In doing so, the element of generic expectations to be met by an author correspond with the options available in responding to reviewer suggestions and comments. Indirectly, reviewing manuscripts facilitates a clearer and comprehensive understanding of the RA publication macro genre, depending on the various possibilities and pathways a particular manuscript progresses through. In this respect, there exists a negative linear relationship among survey participants as with the category of postgraduate supervision. A 57% majority (34 participants) had no experience in reviewing, revealing lack of exposure and opportunity to actively engage with the discourse community. This results in a slightly higher overall engagement as reviewers among 12 participants (20%) with some experience in reviewing 5 or fewer manuscripts, 8 other participants (13%) have reviewed 5 to 10 RAs and the categories denoting 10 to 20 and 20 or more RA's were representative of 3 participants (5%) each.

The above discussion of various participant demographics provides a baseline for the assessment and analysis of survey responses and feedback from participants on their potential levels of awareness and perspectives on scientific writing with respect to RA publication. It is pertinent to acknowledge possible variables in view of subjective decisions and opaque

decision making which comprise some other social factors that are beyond the scope SFL. These include cronyism, favouritism and personal bias with respect to the role of the Editorial Board decision and that of the editor.

This preliminary approach to discussing survey results prior to triangulation of results from the case studies, macro genre and semantic coding analyses will validate claims based on the population and specific sociocultural criteria of respondents. Most feedback are representative of the 30 – 40 age group and this is significant because this is the age group most representative of the scientists in focus here. It marks a point when typical professionals in the field have potentially mastered discipline specific writing skills that contribute to achieving a higher rate of success with RA publication. Instead however, the numbers in Figures 7.4 and 7.5 indicate a majority of respondents actually fall within the categories of under 5 published RAs or none as both main and co-author. Significantly, this is inconsistent with the results on scientific writing proportionality. Over 80% of respondents acknowledged 20 - 40 % of their work routine is for scientific writing; yet the rate of success with RA publication is arguably not reflective of this effort, hence ultimately reinforcing the motivations for my study, together with a juxtaposition of findings from each phase of analysis.

7.3 Survey Feedback

Analysis of participant feedback and responses on a spreadsheet comprising answers to questions involving a Likert scale allows for the discussion of survey results. Calculation of mean values for all responses reveals potential trends in levels of awareness and understanding on a range of metalinguistic and macro generic issues in reference to scientific writing and the RA publication macro genre. Of the above demographic information categories, number of publications as main author in peer reviewed journals was the most appropriate variable to measure and further categorise participant feedback. Feedback from four categories of participants, specifically those with >10 publications, 5 to 10 publications, < 5 publications and no publications as main author were individually analysed. Further calculation of mean results for each of these categories provides an insight into specific aspects of scientific writing and RA publication. Juxtaposition of survey results with semantic coding categories of structural, functional and technical as well as macro genre features confirms levels of knowledge versus application in practice for both processes.

The subsequent discussion of results relate to the categories for number of publications as main author (Figure 7.4). Survey results include responses to questions on a 5 point Likert scale as well as written responses. Analysis of the former involves calculating means of responses for each category that indicate levels of knowledge in terms of awareness and understanding on specific aspects of scientific writing for RA publication, while the latter involves classification of written responses of problem areas in association with semantic categories (structural, technical and functional) or a combination of results from previous phases of this research, i.e semantic coding, macro genre and case studies. The following sub-sections comprise both quantitative and qualitative analyses of participant feedback in comparison with analysis of the dataset on actual texts (RA, RRs and ARRs) and the macro genre as a whole.

7.4 Analysis, Results and Discussion of Likert Scale Responses

Results of Likert scale responses are in association with semantic categories of structural, technical and functional metalinguistic issues along with a number of macro genre features and generic aspects of scientific writing for publication. These results indicate variations in levels of knowledge, understanding and awareness with respect to participant categories (number of publications). Classification of responses according to semantic categories allow for presentation of results in this order. Majority of survey results involve functional and technical categories, while few others relate to the structural category and results on macro genre as well as writing features. A graphical representation of mean values for each aspect in reference to participants' success with publications supports the subsequent discussion of results and further juxtaposition with results from the previous analyses in other phases of this research.

While survey feedback indicates the level of knowledge, awareness and understanding on various aspects, semantic coding results indicate their corresponding levels of application in practice with respect to the proportion of occurrence for a particular metalinguistic code in RRs. In this regard, proportions above 50% indicate a poor level of application, while those between 30 to 49%, lacking application, and 11 to 29%, a moderate application of the respective issues in practice. Proportions of 10% and below hence indicates an affirmative level of application, in accordance with the metalinguistic codes. On the other hand, calculation of mean results range between the 1 and 3 point mark for survey feedback on the Likert scale of 1 (affirmative) to 5 (poor) in the following order: mean results between 1.5 to the 2 point mark on indicates affirmative awareness; 2.1 to 2.5 indicates moderate awareness; 2.6 to 2.9 indicates

lacking awareness; and above the 3 point mark indicates poor awareness of the corresponding aspect.

The first aspect pertaining to structural issues was feedback to the statement “The Methodology section should reflect reproducibility to the reader”. Figure 7.8 below depicts results of mean values from participant feedback, according to categories denoting number of publications.

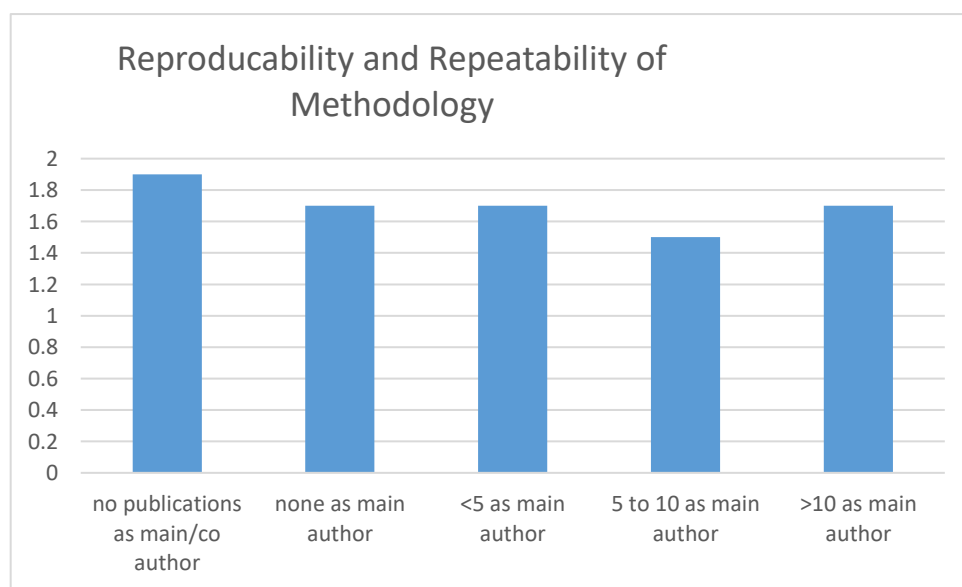


Figure 7.8: Mean results for reproducibility and repeatability of Methodology

Responses to this question indicate a strong agreement on the importance of reproducibility and repeatability of the Methodology in an RA across participant categories irrespective of number of publications, considering results fall below the 2 point mark on a scale of 1 to 5, where 1 is strongly agree and 5 strongly disagree. Hence, participant feedback are generally favourable to the importance of reproducibility and repeatability of “methodology” in an RA. While this implies a commendable level of understanding among all participants, it contradicts findings of the semantic coding (Chapter 6, section 6.2.1). The metalinguistic code “methodology” under the semantic category of structural issues is representative of this issue, where 77.7% of RRs highlight weaknesses in this regard, reflecting a major weakness of RAs within the dataset. Quantification of the extent and proportion of this metalinguistic code in RRs implies a poor level of application (>50%) in practice. Further, this issue occurs in all 13 rejected RAs within the dataset. Hence, this finding confirms that although participants acknowledge the potential importance of reproducibility and repeatability of “methodology”, its application in the context of the present dataset is unsound.

The following responses were in relation to the functional category, reflective of language weaknesses and corresponding metalinguistic codes (Chapter 6, section 6.2.3). Figure 7.9 below indicates mean results for participant responses to the question “Rate your preference on scientific writing containing fairly short sentences with less complicated grammar” which associates with the functional issue of “grammatical errors”.

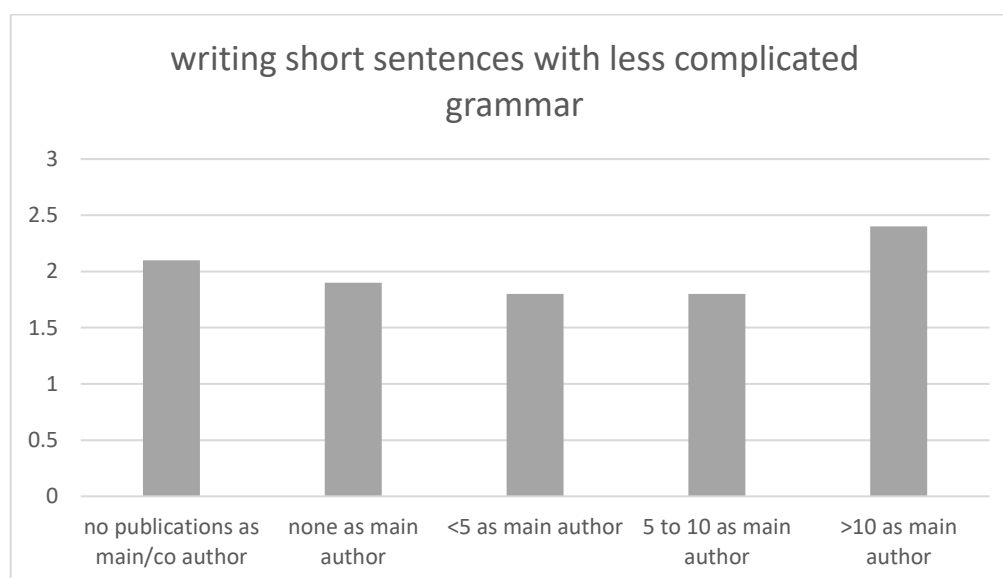


Figure 7.9: Mean results for writing short sentences with less complicated grammar

Participant responses are generally in agreement, i.e. under the 2 point mark, while those with no publications as main/co-author and those achieving > 10 publications differ in their view, having lower levels of agreement. As prolific writers, the latter group imply confidence in circumventing grammatical errors. However, as with the previous results for “methodology”, semantic coding findings confirm that “grammatical errors” are also indicative of high proportions of occurrences in RRs which implies poor application in practice, i.e. 68.4% and account for a consistent flaw in all 13 rejected RAs within the dataset. Juxtaposition of results from the survey and coding analyses hence confirms contradicting levels knowledge and application of this aspect in scientific writing for publication.

Figure 7.10 shows responses to the question on “Rate your awareness on accurate use of the English articles (a, an or the) appearing before nouns in scientific writing” which directly relates to the omission or inclusion of a definite/indefinite article corresponding to the metalinguistic code of “coherence” as part of the functional category.

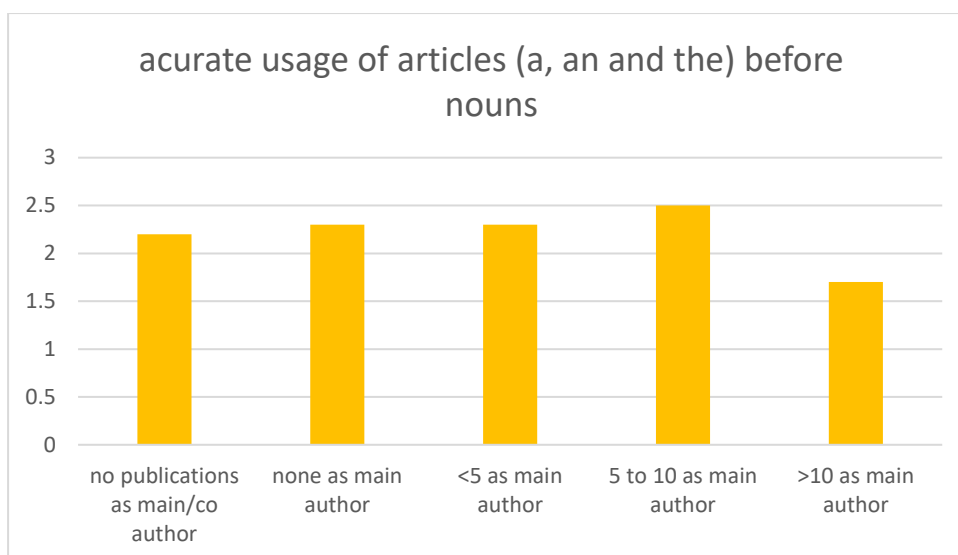


Figure 7.10: Mean results for accurate usage of definite/indefinite articles

Mean results across participant categories indicate a moderate level of awareness ranging between the 2 to 2.5 point mark, considering a scale of 1 (excellent) to 5 (poor), with an exception for the category of participants with > 10 publications as main author. On the contrary, mean results of this latter group which falls under the 2 point mark exudes assurance in view of experience and strength in scientific writing for publication. In view of the semantic coding results, “coherence” as a metalinguistic issue is highlighted in 33.1% of RRs which implies a lacking level of application in practice. Mean results of survey feedback for this issue therefore again contradicts the semantic coding results, though to a lower degree with a moderate level of awareness in terms of knowledge of the issue in contrast to a lacking level of its application in practice.

Feedback to the question “Rate accurate usage of sentence connectors (however etc.) in your writing” reveals a moderate level of knowledge in terms of awareness and understanding (Figure 7.11). This aspect corresponds with the metalinguistic issue of “cohesion”, where a proportion of 22.3% of this code in RRs indicates moderate application in practice. Both results of the coding and survey are in agreement for this issue and hence support the levels of knowledge and application, accordingly.

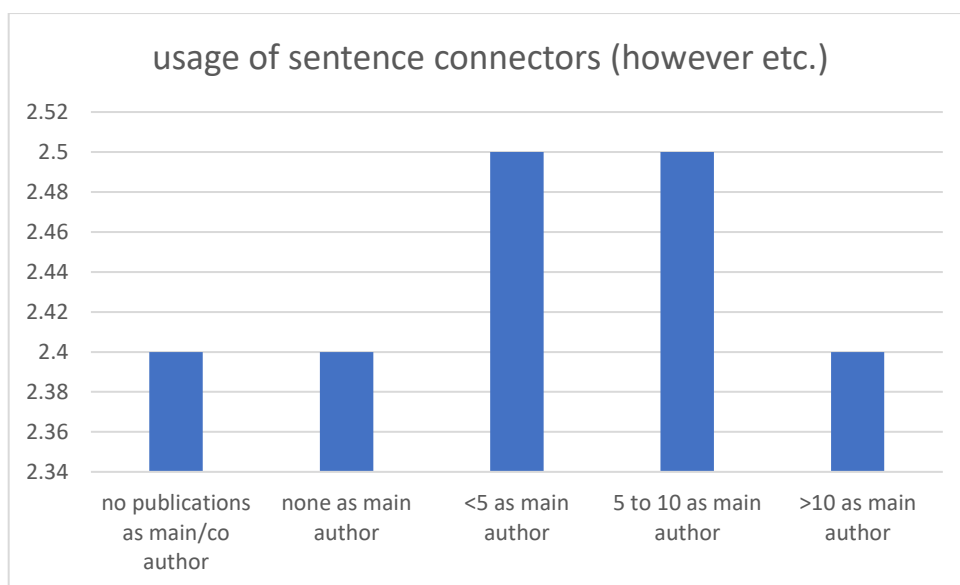


Figure 7.11: Mean results for usage of sentence connectors

The following aspect represents feedback to the question “What is your awareness on nominalisation in scientific writing?” and mean results of responses (Figure 7.12) indicate a poor level of awareness and understanding across all categories of participants on this important grammatical tool. Nominalisation reflects an aspect of scientific writing in general, however most applicable in interpretation of results. It represents a solution and corrective measure for the metalinguistic issue particularly pertaining to “justification of results”. While the code implies a lacking level of application in practice with 38.1% proportion in RRs survey results involve feedback from participants with varying levels of experience and hence support emphasis on introducing nominalisation to novice writers in particular, as a noteworthy feature of scientific writing for publication.

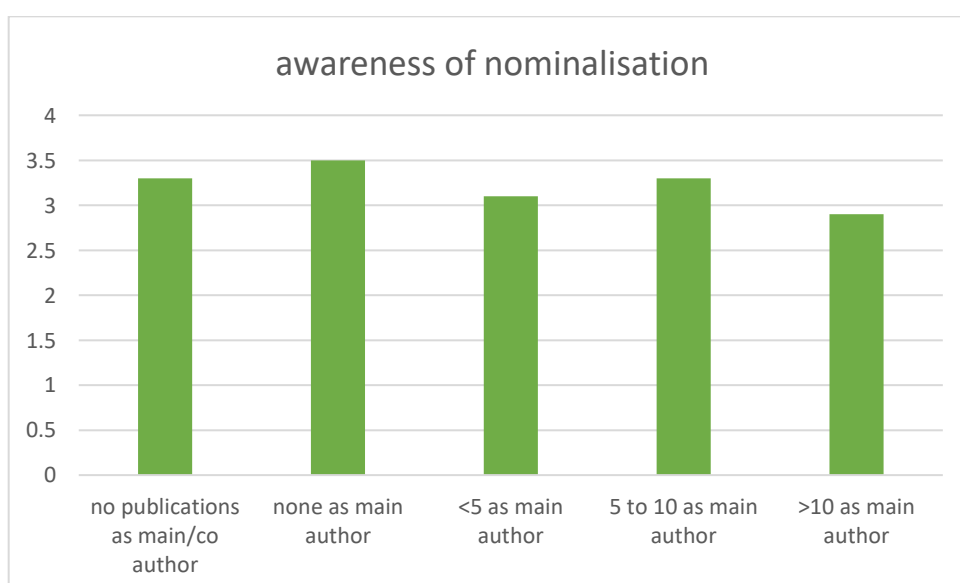


Figure 7.12: Mean results for awareness of nominalisation

In relation to the question “What is your awareness on the application of hedges, boosters, intensifiers and evaluative adjectives for strengthening claims in scientific writing?”, mean results of participant responses are also indicative of a poor level of awareness (above the 3 point mark) across categories.

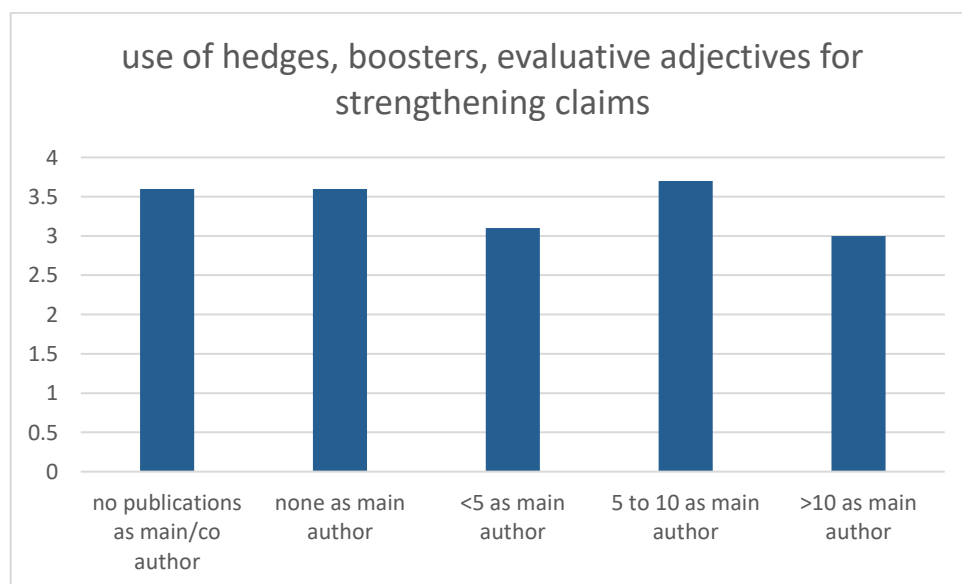


Figure 7.13: Mean results for use of hedges, boosters and evaluative adjectives

The application of hedges, boosters and evaluative adjectives for strengthening claims is directly proportional to “justification of claims”, a technical metalinguistic code resulting from the semantic coding analysis. The coding results however indicate moderate awareness of its application in practice with the proportion of occurrence in 18% of RRs. The code however has a high rejection ratio, i.e. 28% of these RRs and survey results reveal a poor level of knowledge among participants. It is therefore a valid metalinguistic emphasis with regard to scientific writing for publication.

Mean results on responses to the statement “Results and data are not one and the same” lacking awareness across participant categories, range above the 2.5 point mark. Feedback on this aspect correlates with interpretation of results which were representative of the metalinguistic code “inaccurate statements” in the technical category. The code reflects high proportions in RRs and those recommending rejection of RAs accounting for a lack of application in practise. Both survey and semantic coding results for this issue thus correspond in reflecting lacking levels of knowledge and application among Malaysian scientists.



Figure 7.14: Mean results for results and data

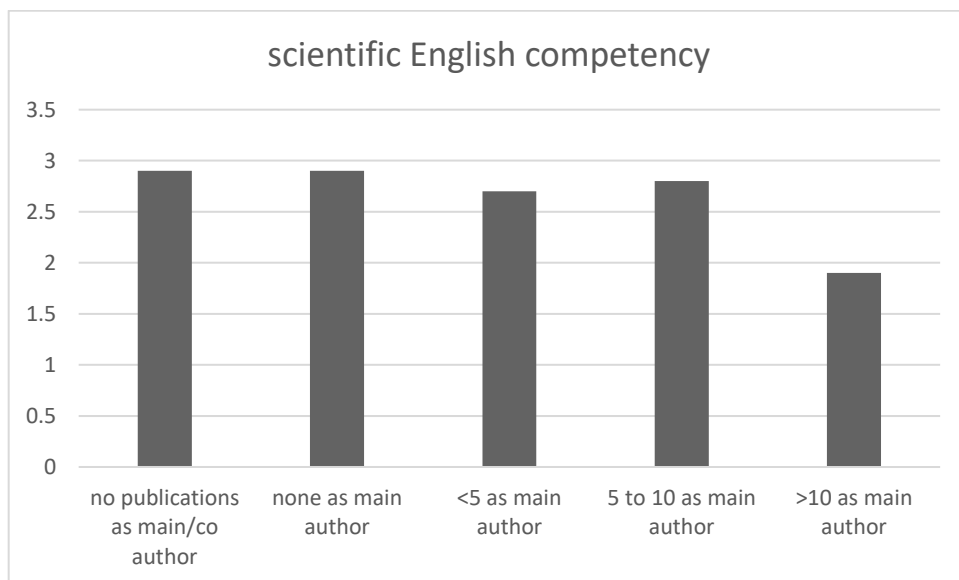


Figure 7.15: Mean results for scientific English competency

In reference to the feedback on “Rate your proficiency and competency of scientific English.”, participant responses on average reflect lacking awareness (above the 2.5 point mark) across participant categories in Figure 7.15, with an exception of prolific writers with >10 publications. This aspect corresponds in general with all semantic categories of structural, technical and functional metalinguistic issues. Confirmation of lacking knowledge in scientific English proficiency therefore supports motivations for this study in addressing challenges of novice scientists in writing for publication.

The following results reflect scientist ability to express perspectives, particularly in relation to the metalinguistic code “impact and value of publication”. Similar to the previous aspect discussed, this issue implies a lacking level of understanding and awareness across participant categories apart from that of prolific writers with >10 publications. The semantic coding results involve a proportion of only 13% in RRs confirming a moderate level of application in practise for this issue. However, a notable rejection ratio in 38.9% of RRs accounts for the implication of this issue in scientific writing and achieving publication.

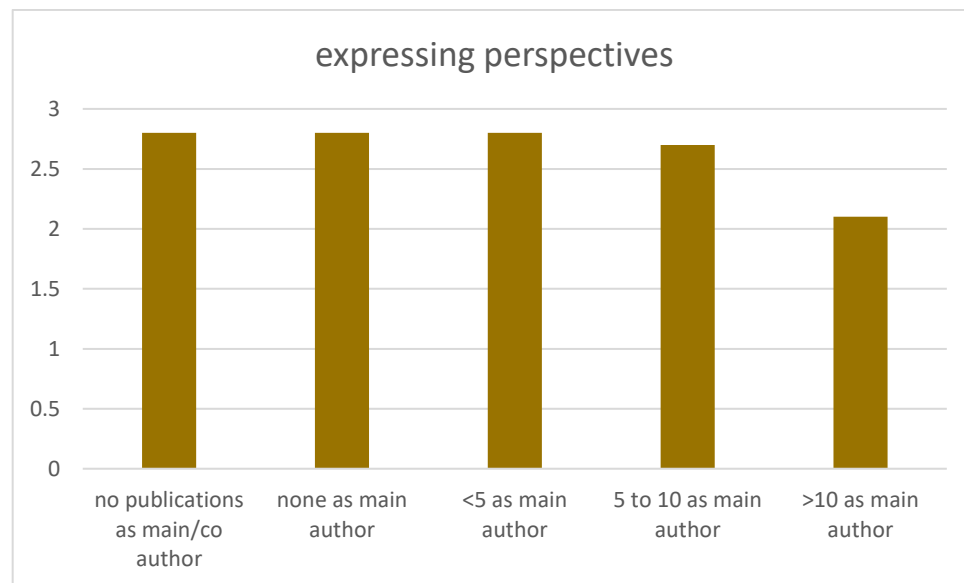


Figure 7.16: Mean results for expressing perspectives

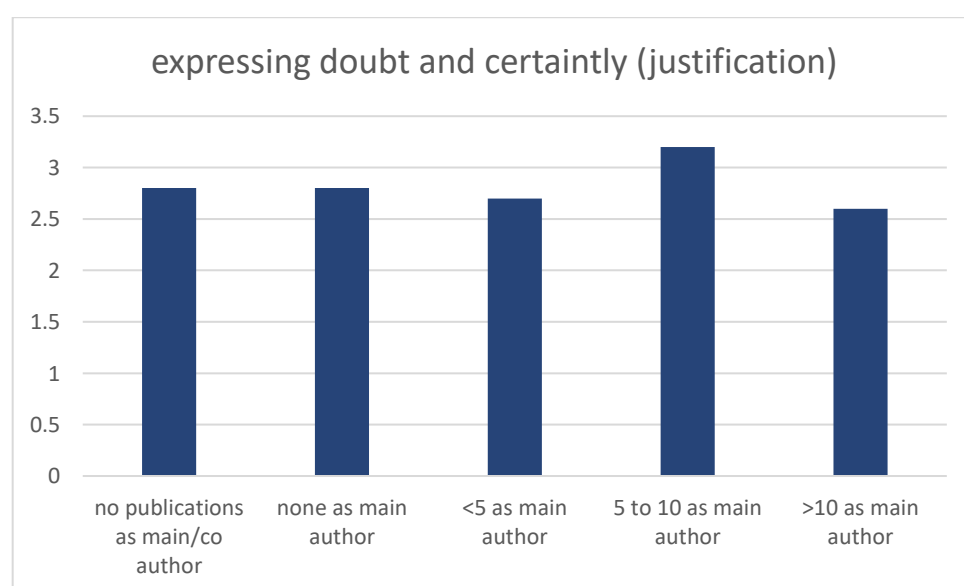


Figure 7.17: Mean results for expressing doubt and certainty

Figure 7.17 above indicates results of responses to “Rate your competency in expressing doubt and certainty in scientific writing.” This element represents a combination of three metalinguistic codes that involve justification of study, results and claims under the semantic category of technical issues. Mean results from the survey confirm lacking awareness in this respect which supports findings of the coding results, which also reflect lacking application in practice for these issues. Hence it is a valid confirmation that scientists, and novice writers in particular, need to improve levels of knowledge and application in expressing doubt and certainty with regards to achieving success with publication.

The following aspect involves responses to the question “Do you point explicitly to gaps or weakness in previous research by means of as many citations and predominantly reliant on recent citations in your writing?” which relates to the metalinguistic code “justification of study”. Mean results in Figure 7.18 below indicate lacking awareness (above the 2.5 point mark) across categories of participants with publications as main author and poor awareness (above the 3.0 point mark) among those with no publications both as main and co-author. Semantic coding results however imply a proportion of 23% of RRs involving this issue, which corresponds to a moderate level of application in practice. The Likert scale’s inability to quantify a complex and very subjective experience with particular regards to the drop in average responses for the category of participants with <5 publications indicates a moderate level awareness for this aspect which, however, contradicts the lacking levels of awareness in participant categories of 5 - 10 and >10 publications. Results of the <5 publications participant category are nonetheless reflective of the semantic coding results which indicate a corresponding moderate level of application in practice. The take-away point is, however, a poor level of knowledge on this aspect among novice writers with no success in achieving publication. This feature is therefore a noteworthy consideration in scientific writing for publication.

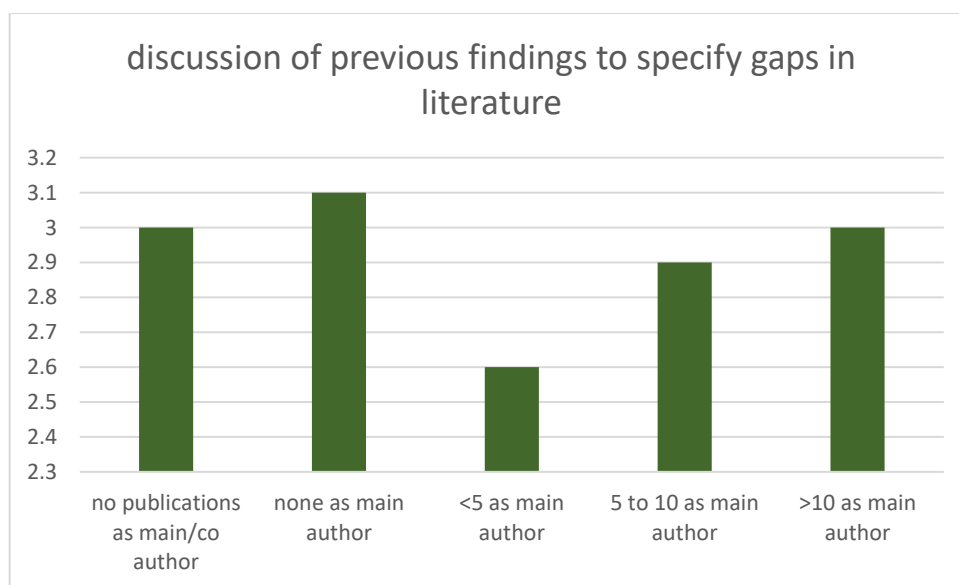


Figure 7.18: Mean results for discussion of previous findings

The following considerations and juxtaposition of survey results correspond with macro generic features of RA publication. Figure 7.19 are mean results of responses to the statement “In responding to reviewers, authors should acknowledge feedback received together with a clear listing of justifications/amendments incorporated.” This aspect relates to the metalinguistic code “comprehensive” from coding of ARR. Survey results indicate an overall agreement and affirmative level of knowledge (between 1.5 and the 2 point mark) on this issue, although participants with no publications as main or co-author acknowledge moderate awareness (above the 2 point mark), in this regard. Coding results on the other hand indicate 32% of ARRs as “comprehensive”, thus confirming 68% of non-compliance in reference to the codes “justification only”, “negative justification”, “acknowledgement only”, “unclear response” and “non response”, which implies a poor level of application in practice. Both findings of the survey and coding analyses therefore are contradictory and emphasise the importance of application over acknowledging awareness in regards to the core genre of ARR. From a macro generic perspective, responding to reviewers comprehensively allows for a smooth progression within the stage of Conclusion, towards achieving an unconditional final acceptance for publication (Chapter 5).

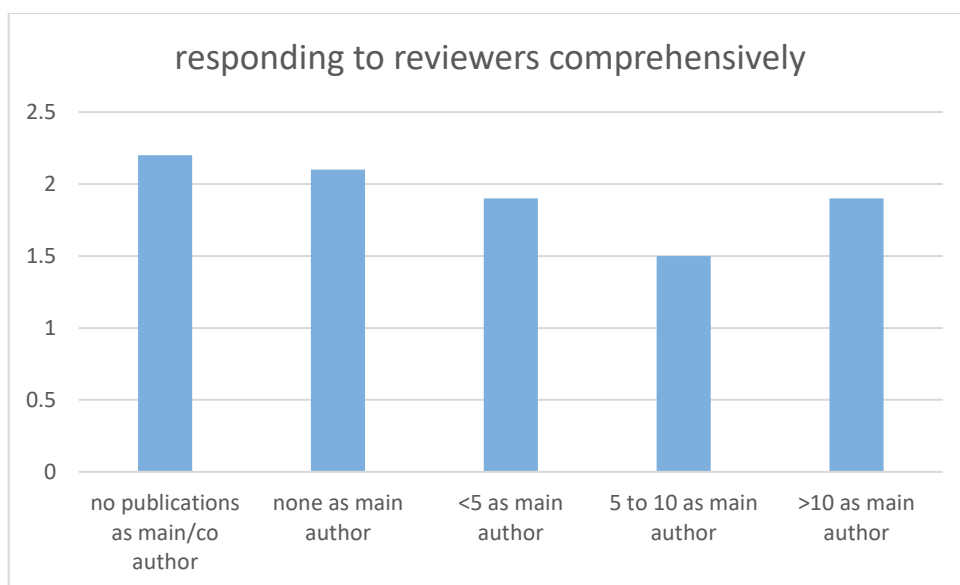


Figure 7.19: Mean results for comprehensive ARR

In view of the macro genre perspective and points of contention for successful navigation through the RA publication process, a dialogic approach to scientific writing is part of future recommendation as a result of findings from the four phases of this research. Survey feedback to the statement on “Writing is a dialogue not a monologue” reflects a moderate level of awareness (between 2 to 2.5) among participant categories (Figure 7.20). To reiterate findings from the multiple case study and macro genre analysis (Chapters 4 and 5), relationships between the writers of scientific RAs and their readers vary, depending on which specific readers are being considered. While it may seem evident that an RA is written for other researchers in the area, there are also crucial readers in the form of editors and reviewers who not only engage with the evolving RA, but also in various ways with the writer or writers of that article.

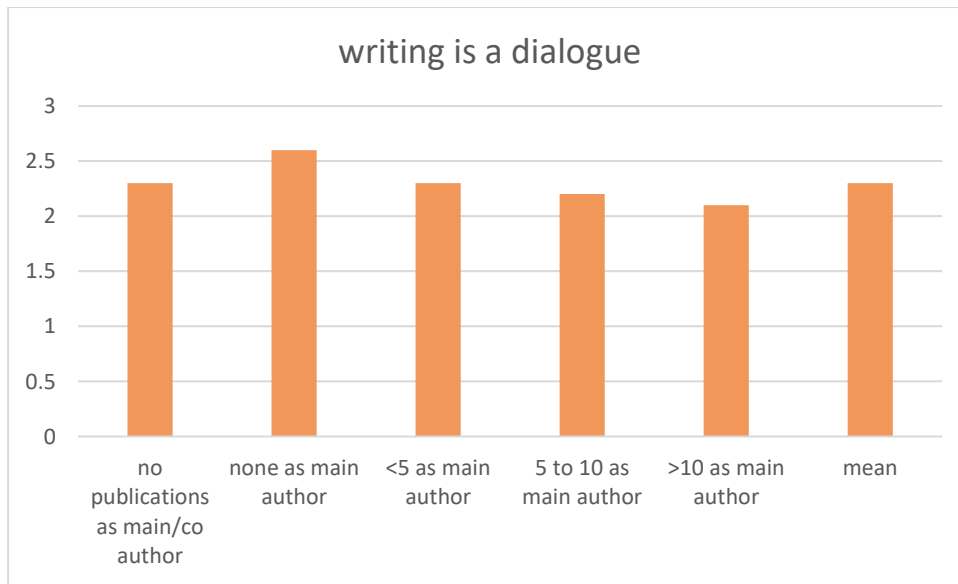


Figure 7.20: Mean results for writing is a dialogue

This fundamentally interpersonal issue may be made problematic when writers do not have experience with the entire publication process, and therefore have challenges at both the production and negotiation levels. To support my argument in previous chapters, survey feedback indicate that participants generally assume that an RA is a single, finished text, rather than the central artefact of the ongoing discourse, and one which is meant to change over time, in reference to “bibliogenesis” (Charlotte and Irwin, forthcoming).

The final aspects of the survey feedback and analysis of mean results correspond with each other in allowing for better levels of knowledge and application in practice, accordingly. These relate to “Writing is a process”, “Rate your experience in co-authoring and collaborative writing with peers” and “Rate your familiarity with stages of submission, RRs/editorial decision, and ARR, revision, acceptance and proofs/consent to publish with regards to publication of a research article”.

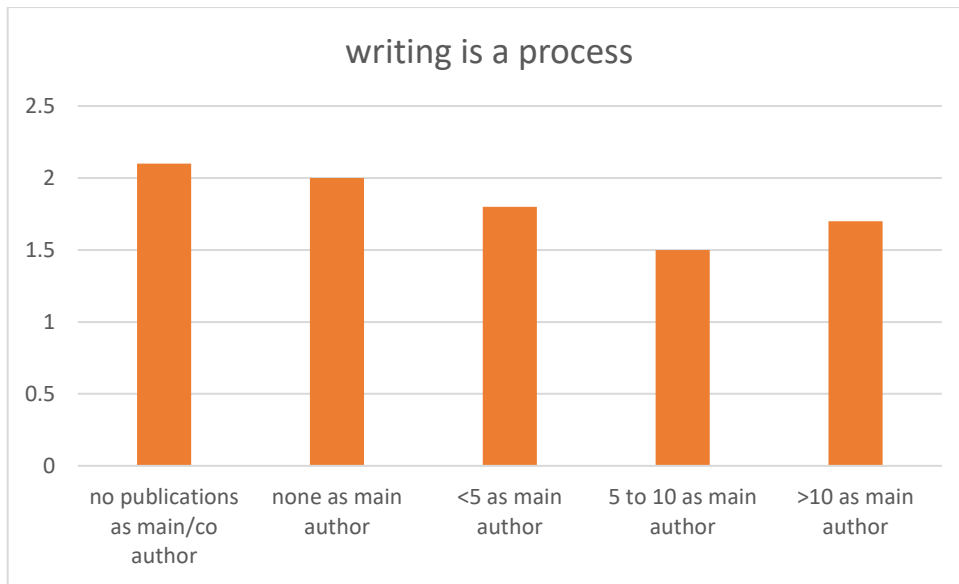


Figure 7.21: Means results for writing is a process

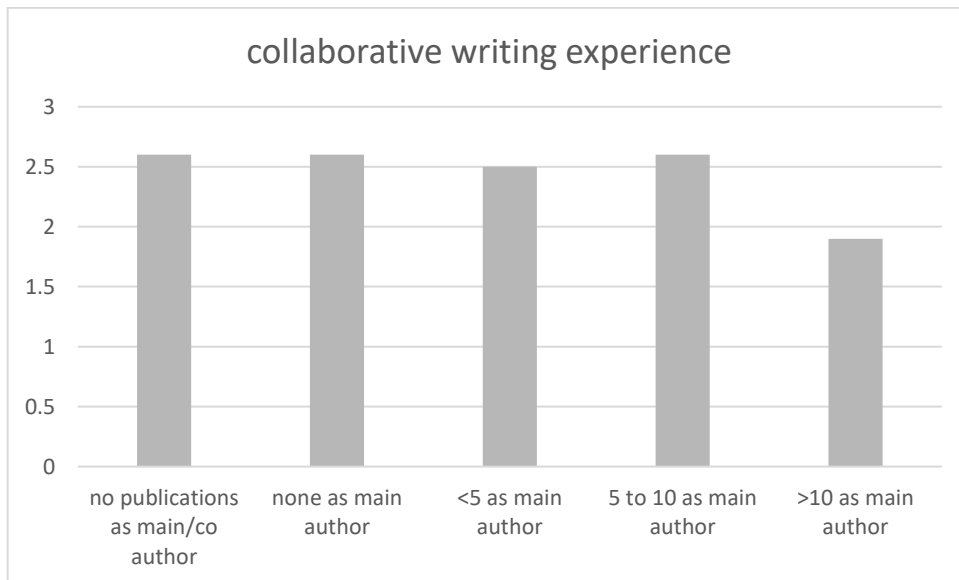


Figure 7.22: Mean results for collaborative writing

Figures 7.21, 7.22 and 7.23 indicate mean results across all categories of participants for both aspects. Most participants with publications acknowledge affirmative agreement and awareness (below the 2 point mark) on writing is a process, while those with no publications as main and co-author indicate moderate awareness (at and above the 2 point mark), respectively. There exists lacking awareness (above the 2.5 point mark) on collaborative writing among most participants apart from those with >10 publications. Mean results on familiarity of macro genre stages indicate a poor level of awareness (above the 3 point mark)

among participants with no publications. Levels of awareness on this aspect however improves significantly (below 2.5) across participant categories with increasing number of publications. From my insider experience, I can confirm the trend of increase in levels of both knowledge and application for these aspects upon achieving success with RA publication. This validates the association of writing for publication and expertise in the domain involving the process of gaining acceptance (obligatory elements, Chapter 5), while pursuing the macro generic stages towards publication.

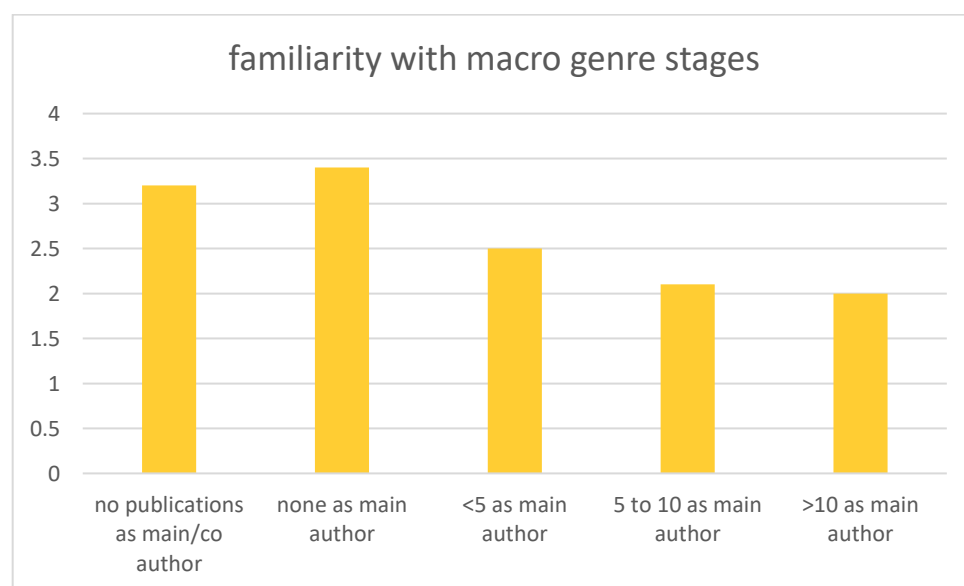


Figure 7.23: Mean results for familiarity with macro genre stages

7.5 Juxtaposition of Survey and Semantic Coding Results

The above results and discussion of each aspect within the survey and juxtaposition of feedback with results from other phases of this research validate levels of knowledge versus application on scientific writing and RA publication processes. A comparison of mean results across participant categories with publications, and those who acknowledge no success with publications serves to reaffirm the levels of knowledge, awareness and understanding on respective aspects corresponding with motivations of this study. Participants across all categories acknowledge affirmative awareness for the aspects of “methodology”, “writing short sentences”, “responding to reviewers” and “writing is a process”, noting a consistent trend of mean results below the 2 point mark (Figure 7.24). There is however a moderate level of awareness for most of these aspects, except “methodology” among participants with no

publications as main or co-author. This result validates the effect of application versus knowledge in these apparent aspects of scientific writing for RA publication.

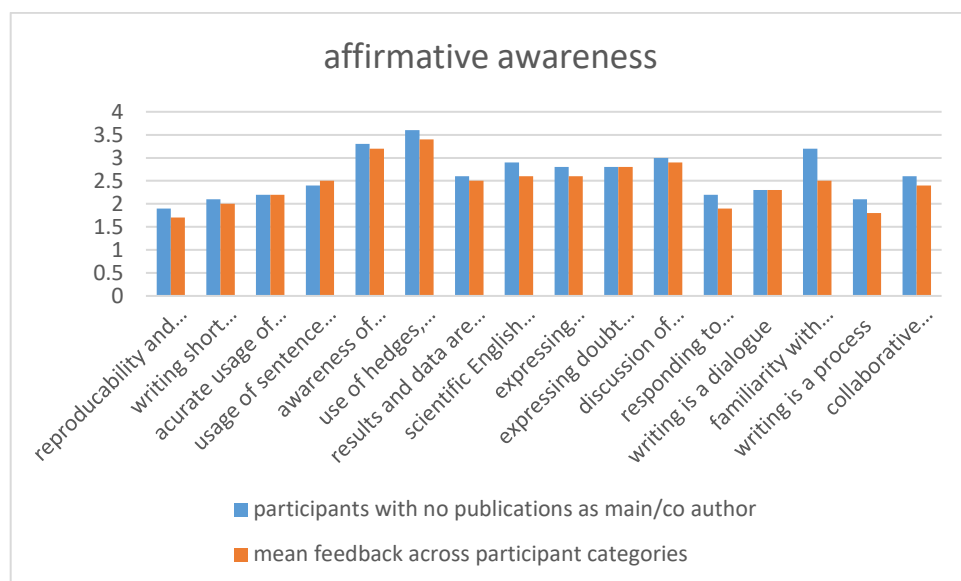


Figure 7.24: Levels of affirmative awareness across participant categories

To a greater extent however, semantic coding results confirm a poor level of application in practice particularly with respect to “methodology”, “grammatical errors” and “comprehensive” response to reviewers. In this regard both former codes occur in all RRs recommending rejection of an RA, with an exception of the latter. Although the dataset reveals these aspects as prevalent issues in scientific writing for RA publication, a conflicting result is apparent from the survey. These results contradict that of the semantic coding analysis, which indicates remarkable proportions of the corresponding metalinguistic codes in RRs. The coding results also reveal major issues with “methodology”, “grammatical errors” and “comprehensive” (ARRs). This juxtaposition infers that scientists generally acknowledge the importance of these metalinguistic issues.

In essence, if scientists put into practise knowledge, awareness and understanding of these aspects there would be an increase in potential success with RA publication. As per the contradictory findings of tenor and modal concerns above, the semantic coding results validate a relatively high proportion indicating poor and lacking levels of application in practice with regards to these issues. Hence despite an acknowledgement of awareness among survey participants, application of these aspects in practise remains unsound as a result of the coding analysis and within the context of the present dataset. Survey and coding results also infer that the affirmative level on realisation of responding to reviewers is predictable among authors in

general, while its application is to a lower degree. Hence juxtaposition of semantic coding and results of affirmative awareness among participants confirm the lack of application over understanding.

Figure 7.25 depicts trends in the various aspects indicating a moderate level of awareness across participant categories (between the 2 to 2.5 mark). Participants with no publications as main or co-author acknowledge an equal level of awareness for these aspects in general, with a slight increase in mean results indicating lacking awareness for “results and data are not one and the same”, “familiarity with macro genre stages” and “collaborative writing experience”. Semantic coding results for these aspects confirm a lacking level of application in practice with more than 30% of RRs highlighting issues in this regard. The higher level of awareness for these issues reflect a disparity between knowledge and application of these aspects. Issues pertaining to results, specifically its interpretation and representation in the RA involve flaws with realising the nature of variation between raw data and further analysis to reveal findings of the study. Results of both survey feedback and semantic coding analysis support this aspect. Significance of a clear understanding and distinction between data and results contributes towards the likelihood of success with RA publication.

Although “writing is a process” is not indicative of semantic coding categories within the dataset, it reflects an understanding among participants with regards to the nature of scientific writing for publication in relation to success or failure of the macro genre and its expectations. Understanding the proportionality and expectations of RA sections, correlates with structural elements in the semantic coding analysis. A moderate level of awareness among survey participants supports weaknesses pertaining to the various sections of an RA within the dataset. Further efforts to disseminate findings of these analyses will contribute towards enhancing awareness, understanding and potential application, accordingly.

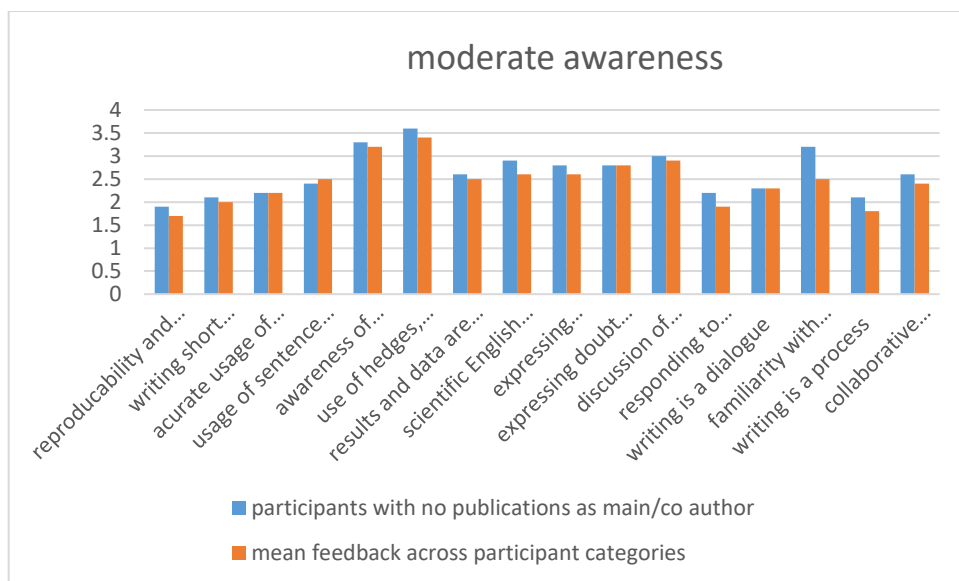


Figure 7.25: Levels of moderate awareness across participant categories

Figure 7.26 below indicates feedback on aspects that reflect a trend of lacking awareness (above 2.5 and below the 3 point mark). It is interesting to note corresponding levels of knowledge with regards to expressing doubt and certainty between participants with and without publications. This aspect also matches the semantic coding results which indicate a lacking level of application in practise for this metalinguistic issue. Both survey and semantic coding results reveal a strong implication of lacking understanding and application respectively, in view of this weakness in writing for RA publication. Hence expressing doubt and certainty (justification) is a valid problem area with regards to scientific writing for RA publication among scientists. There is a notable decrease in lacking levels of awareness for the remaining aspects in Figure 7.26, where experience with RA publication seems to suggest a better understanding of these aspects. Semantic coding results positively emphasise a moderate level of application in practise for expressing perspectives and discussion of previous findings, which supports the impact of experience and success with RA publication.

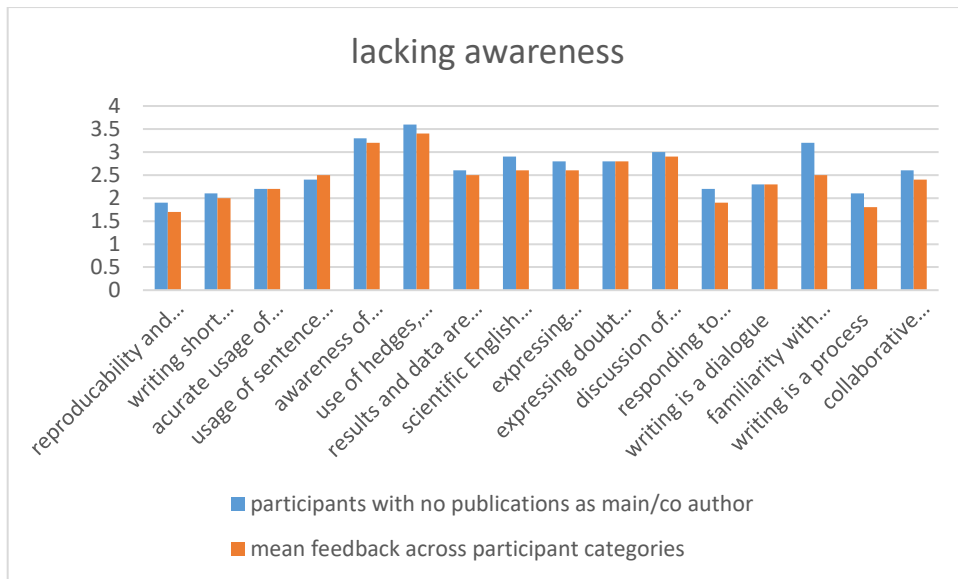


Figure 7.26: Levels of lacking awareness across participant categories

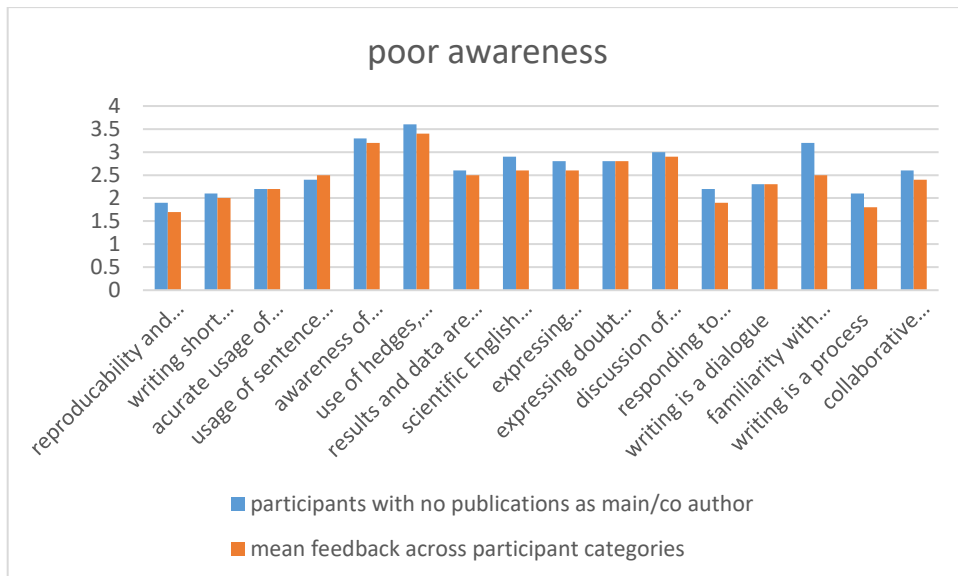


Figure 7.27: Levels of unawareness across participant categories

The only two aspects of survey results which correspond with a poor level of knowledge, awareness and understanding across participant categories are that of nominalisation and use of hedges, booster and evaluative adjectives for strengthening claims. Both of these aspects are reflective of important grammatical tools for scientific writing which will have a positive impact on scientists achieving success with RA publication. Nominalisation is among scientific discourse features that Halliday (2007) suggests, in relation to packaging scientific information as grammatical metaphor (section 2.11, Chapter 2). The levels of unawareness are unsurprisingly higher for participants with no publications as main or co-author which supports

previous inferences of the impact of experience and success with RA publication. Semantic coding results however imply lacking and moderate levels of application for both issues, respectively. Gaining an authoritative stance in view of strengthening claims is also synonymous to the metalinguistic code “value and impact of publication” towards securing the likelihood of achieving publication. Further analysis of these aspects are however beyond the current scope of this research and will represent future recommendations for research pertaining to the RA publication macro genre.

Survey results also indicate a higher level of awareness for tenor and modal concerns over field related issues. These aspects are reflective towards understanding the nature of scientific writing for publication, in line with delineation of the macro genre stages (Initiation, Evaluation and Conclusion, Chapter 5) which ultimately supports the notion of dialogism in view of ARR. Further validation stems from the semantic coding analysis of ARRs, in confirming significance of preserving the dialogic nature throughout the discourse event. Strong correlations between findings of this study and recommendations for potential authors, will contribute to authors’ realising expectations of the publication process as a discourse event in view of navigating through the obligatory and optional elements within each stage of the macro genre.

The levels of awareness and understanding of metalinguistic issues pertaining to scientific writing for RA publication among scientists and potential authors in particular (survey feedback) does not correspond directly with its application in context (case studies, macro genre analysis and semantic coding). While juxtaposing findings above indicate an agreement between awareness, understanding and application in some cases, others contradict these instances. Thus, a combination of results in triangulating findings of this research serves to strengthen and formulate strategies for the way forward and worthy recommendations in view of achieving the macro generic goal.

7.6 Challenging Aspects of Scientific Writing and RA Publication

The discussion on qualitative responses from participants elucidates challenging aspects pertaining to scientific writing and RA publication. Further analysis of 60 responses reveal 76 metalinguistic issues and further classification under a combination of 6 semantic categories (Figure 7.28). Analysis of these qualitative responses and respective categories are valid in

correlation with semantic coding results and implication of registerial variables likewise. Of these metalinguistic issues, dominant problem areas are that of discussion of results reported, interpretation of results, Introduction, filling the gap between previous and current research, Abstract, Methodology, Conclusion, References, general writing issues and investigative or fundamental research areas.

A graphical representation of survey responses to this question (Figure 7.28) and their corresponding semantic coding categories indicate the number of metalinguistic issues posing challenges to scientists in achieving RA publication. Classification of participant feedback according to semantic coding categories indicates a major emphasis on a combination of 32 structural and technical metalinguistic issues and a further 24 technical metalinguistic issues. To a lesser extent, following categories comprise 8 metalinguistic issues on macro genre aspects, 7 functional metalinguistic issues, 3 metalinguistic issues involving a combination of structural and functional categories and 2 structural metalinguistic issues. A summary of these survey response categories in the following tables confirm specific problem areas and their corresponding metalinguistic codes validate the application of these issues in practice.

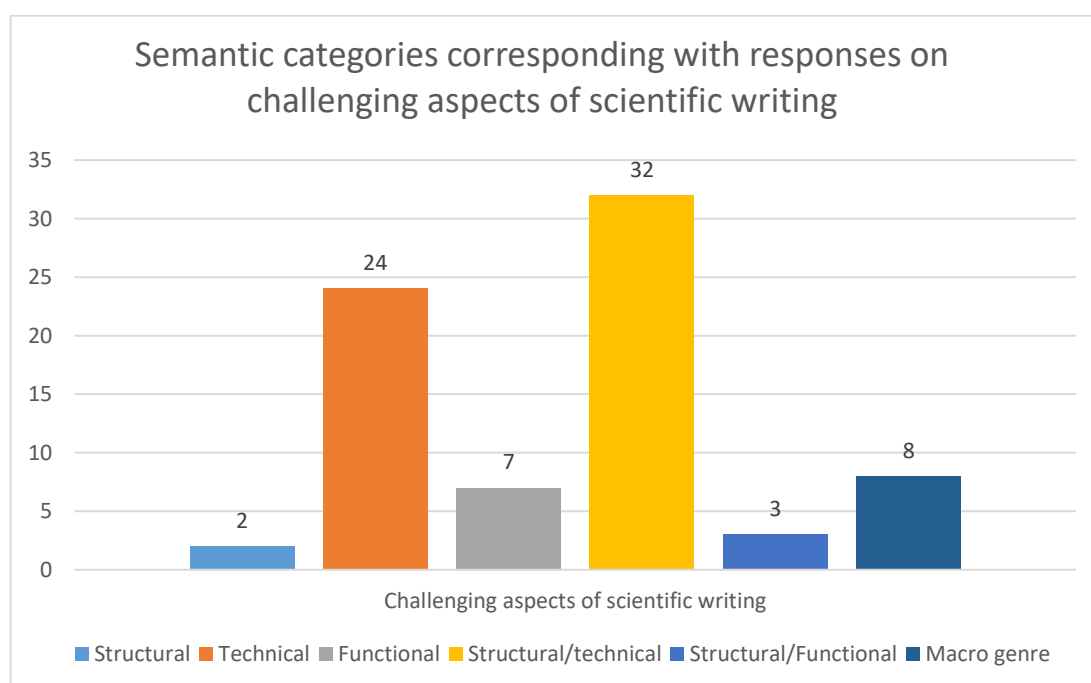


Figure 7.28: Juxtaposition of survey feedback on challenging aspects of scientific writing with semantic coding and macro genre issues

A strong association between survey responses and semantic coding categories validates these metalinguistic issues as noteworthy findings to focus on towards improving levels of knowledge and application, accordingly. Responses reflecting problem areas on “discussion of findings” are entirely field related issues. Survey participants indicate the significance of field related issues and metalinguistic concerns which correspond with observations within the dataset. 24 responses on issues pertaining to “discussion of findings” were reflective of field concerns and correspond with the technical category of semantic coding results (Table 7.1).

Survey responses - Discussion of results reported	Semantic coding - technical issues
Supporting evidence on hypothesis and projection	Justification of study
Theoretical explanation	Discussing previous findings
Clarity of claims	Justification of claims
Summarising data, interpretation and discussion of results	Justification of results

Table 7.1: Technical metalinguistic issues on discussion of results reported

The category on interpretation of results consists of 14 responses on issues that correspond with the technical and structural semantic categories as shown in Table 7.2 below. These metalinguistic issues represent the field and mode of the RA. The category of responses on results can lead towards a potential threat in achieving publication, with an exception of those on statistical treatment involving further statistical tests as well as relevant clarification hence it does not reflect a point of contention. The final category on “novelty of findings” implies the significance of reporting original findings in the RA to avoid affecting the likelihood of achieving publication. Together, these challenging aspects allow for focus on knowledge and application specific to corresponding metalinguistic issues.

Survey responses - interpretation of results	Semantic coding - technical/structural issues
Data analysis	Reporting results optimally Inaccurate statements
Statistically sound results	Statistical treatment
Reliable data for journal publication	Novelty of findings

Table 7.2: Technical and structural metalinguistic issues on interpretation of results

In reference to generic sections of the RA, responses on metalinguistic issues pertaining to the “Introduction” include categories in Table 7.3. The first category of responses indicate modal concerns of the Introduction section as a whole, while assimilating tenor related issues in correlation with the code “value and impact of publication”. In dealing with this problem area, it is pertinent to reflect on engaging with the potential audience or target readership for the RA. This includes a pool of reviewers and other subject specialists who will seek common grounds in evaluating scientific merits of the publication. Potential applications and specific definition of the research gap in the Introduction serves to highlight both value and impact of the publication. Eventually, this aspect will contribute to citations upon publication.

Survey responses – Introduction	Semantic coding- technical/structural issues
Having a good impact in writing	Value and impact of publication
Literature review	Reporting previous findings
Conceptualisation / Objective	Justification of study
Filling gap between previous and current research	Justification of study
Limited source of references	Incomprehensive/inaccurate citations

Table 7.3: Technical and structural metalinguistic issues on Introduction

Remaining problem areas in this category were all field related in sequence confirming significance of including a comprehensive account previous work in the field leading towards a specific connection to the present study. This issue further represents responses on problems relating to the code “justification of study” validating this challenging aspect in both knowledge (survey feedback) and application (dataset coding).

Responses on the “methodology” reflect both field and modal concerns (Table 7.4). The latter involves issues implying problems with the application and methodology, in correlation with the semantic code of “statistical treatment”. Field related problem areas has a direct correlation with the semantic code “justification of study” and “formulae, equations, units and scientific taxonomies”. Issues with justification of study are primarily indicative of a fundamental point of contention, in affirming merits of the publication. Technical elements pertaining to equations may significantly affect the interpretation of results, however appropriate reference to the literature followed by conscious application as well as constructive feedback from reviewers could eliminate potential threats towards publication.

Survey responses - Methodology	Semantic coding - structural/technical issues
Address differences between actual and theoretical framework	Justification of study
Statistical analysis	Statistical treatment
Define physic and mathematic equations	Formula/equations/units/scientific taxonomies

Table 7.4: Technical and structural metalinguistic issues on Methodology

Issues with the “Abstract”, “Conclusion” and “References” include modal concerns, alongside with field and tenor related issues. Responses on the “Abstract” include only a tenor related functional element (Table 7.5). It correlates with the semantic code “clarity and specificity in writing” in line with a concise assimilation of objectives and findings. Responses on challenging aspects of the “Conclusion” represent a field concern on the application of findings and relates to the “value and impact of publication” to some extent (Table 7.6).

Survey responses – Abstract	Semantic coding - structural/functional issues
writing a good abstract	Abstract
expressing clearly	clarity and specificity in writing

Table 7.5: Structural and functional metalinguistic issues on Abstract

Survey responses - Conclusion	Semantic coding - structural/technical issues
possible explanations that need further study	Conclusion
recommendations / application of findings	Value and impact of publication

Table 7.6: Structural and technical metalinguistic issues on Conclusion

Survey responses - References	Semantic coding – structural issues
not able to find enough reference material - limited resources	incomprehensive citations
citation without any plagiarism issues	inaccurate citations

Table 7.7: Structural metalinguistic issues on References

Finally, responses on the problem area of “References” associate the semantic coding of “incomprehensive citations” (Table 7.7). Although this may be the reality in some niche areas with limited work reported in literature, reviewer comments are valuable in supporting the limitation or otherwise recommending sources of relevant references. Another aspect of “citation without any plagiarism issues”, is a modal concern. The significance of careful preparation and validating details of each citation and its source prior to submission or revision, in some cases serves to avoid potential threats in this regard.

Together, issues in Tables 7.1 to 7.7 relate to the Abstract, Introduction, Methodology, Results, Discussion, Conclusion and References of the RA. Juxtapositioning results of the survey feedback with that of the semantic coding analysis validates levels of knowledge, awareness and understanding to motivate application of these metalinguistic elements.

Challenging aspects in reference to scientific writing and publication as part of 7 responses under the umbrella category of “generic writing issues” comprise are field related concerns which reflect functional elements within the semantic coding categories of “cohesion and coherence”. As grammatical tools, metalinguistic elements of cohesion and coherence enhance specificity in writing to avoid omission of information that could result in a flawed interpretation of the RA. Each aspect of functional metalinguistic issues (semantic coding) play a role in improving the scientific writing concerns in Table 7.8 below.

Survey responses – Writing	Semantic coding - Functional/structural issues
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Trying to make the story accordance to relevancy and scientifically sound	Cohesion and sentence fragments
Creating a good flow	Missing information
Organising structure and coherent	Coherence
Rearrangement of the results to make one story	Too speculative Subjective discussion Ommision of trivial and redundant information

Table 7.8: Functional and structural metalinguistic issues on writing

The category of responses on challenging aspects relate to “macro genre concerns” in view of field related concerns on publishing in specific domains with respect to discipline specific expectations for the RA. A review paper in particular involves meticulous discussion and criticism on every aspect within the domain as published in literature. Further field related responses in correlation with “relevance to the scope of JRR” or any particular choice of journal representing the subject area as well as pursuing the discourse event in view of stages and elements towards achieving publication. Tenor related concerns comprise “the importance of “comprehensive” response to reviewers, otherwise risking potential failure in the tenor of discourse due to “unclear response”. A minor concern from the final response in Table 7.9 is an unpredictable tenor concern, in view of the peer review process and significant variation in turnaround time to acceptance for publication.

Survey responses – RA publication challenges	Semantic coding/ macro genre
Investigative / fundamental research	Technical/field
Getting it published in good impact factor journals	field/tenor/mode
writing a review paper	structural/technical/functional
chemical synthesis	Technical/field
choosing a suitable journal to publish / scope relevance	Field
biological articles	Field/technical

answer reviewer question and comments comprehensive acknowledgement and justification	Tenor
waiting period for the submitted paper	Tenor

Table 7.9: Semantic coding and macro genre issues on RA publication

Most responses on challenging aspects of scientific writing and RA publication from the categories above define and validate metalinguistic issues in correlation with the semantic coding or macro genre analysis. Perspectives of scientists are in line with theoretical explanations of registerial variables contributing to genre expectations as described above and highlight key concerns on the structural elements pertaining to specific sections of the RA and generic writing issues. The positive affirmation with semantic coding categories in particular confirms levels of understanding and application for resulting weaknesses.

7.7 Useful Aspects of Reviewer Feedback

The final category of feedback are qualitative responses on useful aspects of reviewer feedback from survey participants. Analysis of this feedback result in 69 metalinguistic issues and further classification of responses under 6 semantic categories. These comprise comments on “overall structure of the RA” (1 response), as well as the “Introduction” (3 responses), “Methodology” (3 responses), “Results” (15 responses), “Discussion” (9 responses) and “Conclusion” (5 responses). Other aspects of responses include “language proficiency” (5 responses), “technical comments” (6 responses) and “general comments and suggestions” (22 responses). A graphical representation of results in Figure 7.29 illustrates patterns in survey feedback on this issue. A considerably higher proportion of responses are indicative of feedback on a combination of structural and technical issues as well as macro genre concerns.

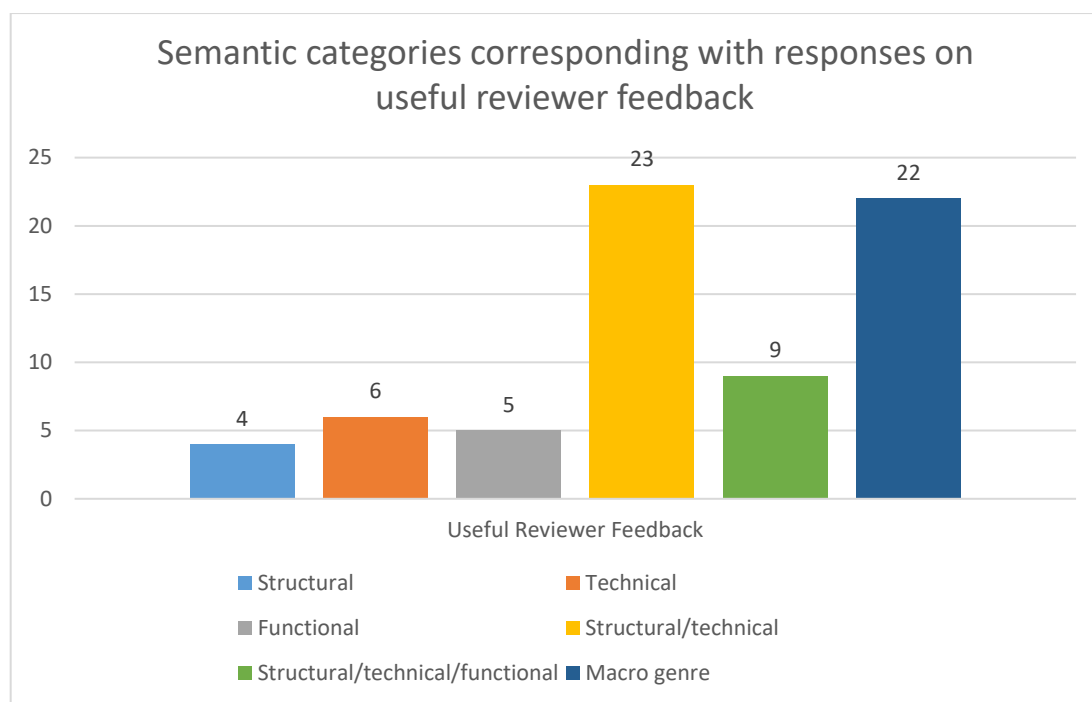


Figure 7.29 : Juxtaposition of useful reviewer feedback with semantic coding and macro genre issues

The single response on “overall structure of the RA” reflects modal concerns and is broadly represented by a comprehensive review rather than specific issues or weaknesses within the RA. Concerns on the “Introduction” include responses in relation to the field of discourse. In corresponding with semantic codes the responses highlight feedback on “literature review” as a concern towards ensuring a comprehensive discussion and citation of previous publications. With regards to reviewer feedback on “methodology”, authors indicate field concerns in reference to justification of approaches (connection between every test) and sound selection of methodology (feedback on appropriateness).

Survey participants identify primarily field concerns pertaining to “Results”, comprising responses on result interpretation, validity of findings and technical comments on results. These issues are prevalent in corresponding semantic coding categories involving a relatively high proportion of occurrence within the dataset. Modal concerns resemble a connection with the semantic code “representation of illustrations”, specifically feedback on improving visual representation of results which in turn validates the specific problem area in reference to a high proportion of occurrence in RRs. The only tenor related concern for reviewer feedback corresponds with a combination of codes involving functional elements of “clarity and specificity in writing” as well as “omission of trivial and redundant information”. Specifically

these responses indicate reviewer suggestions to address weaknesses in data interpretation, critical feedback on research findings and means of explaining the data with minimal words.

Useful reviewer feedback on “Discussion” are field related aspects encompassing improvement in discussion, expanding the depth of argument and feedback on critically discussing results to report findings. These concerns support semantic coding results and keep with the trend in corresponding survey feedback and semantic coding categories to reflect convergence in expectations and practice while affirming weightage of reviewer feedback to authors on these metalinguistic issues. Corresponding data extracts (Tables 6.1, 6.3 and 6.5) relate instances of these semantic categories to support the metalinguistic codes above. In reference to aspects of “Conclusion”, authors indicate useful feedback on field of discourse comprising suggestion for further works, expanding conclusion, appropriateness as well as application and end products as well as a tenor related issue on potential impact of the research corresponding to “value and impact of publication”. Semantic coding results indicate a low proportion of occurrence within the dataset. However, it represents a remarkable point of contention in view of higher proportions in RRs recommending rejection of RAs with these metalinguistic issues. Thus, feedback on strengthening claims and recommendations in the context of structural expectations for an RA’s Conclusion will assist authors in improving their stances accordingly.

Among others, the category of “language proficiency” involves aspects of “grammatical errors” in corresponding with high proportions of occurrence within the dataset. The category of responses involving “technical comments” comprise feedback on the usage of scientific terms, technical corrections and comments, as well as current research trends. Responses also indicate the effect of a technical review to enhance impact of the publication. Together these responses reveal a strong correlation with the semantic category of technical issues and corresponding metalinguistic codes.

The final semantic category of responses on useful reviewer feedback comprise general aspects pertaining to “reviewer comments” which are mostly in association with either the field or tenor of discourse with an exception of 2 metalinguistic issues reflecting field, tenor and mode of discourse. Participant responses indicate importance of comprehensive reviewer feedback to allow for sufficient understanding of flaws and metalinguistic issues in the RA. The level of detail on technical aspects will contribute towards enhancing quality and contents of the RA upon revision or otherwise resubmission in some cases. In that regard, it is apparent

that feedback from reviewers on generic and relevant weaknesses of the RA comprise constructive and valuable suggestions. These are in line with improving the quality of the RA which is the ultimate social purpose and goal of the macro genre.

7.8 Summary

A review of findings from participant perspectives as authors and reviewers on various metalinguistic concerns surveyed pertaining to scientific writing and RA publication indicate corresponding trends in levels of awareness, specifically relating to semantic coding categories as well as the macro genre analysis. Results in the present and previous chapters strengthens claims on metalinguistic issues to be addressed among scientists in seeking to achieve publication. Indexing of survey feedback reflects a quantitative measure of strengths and weaknesses, while their correspondence to semantic coding categories and contradiction likewise, in some cases serve to reflect distinct variations in levels of understanding and application of these metalinguistic issues. Survey feedback directly relates to the semantic coding of the dataset, and juxtaposing the qualitative questionnaire responses in particular highlights the most challenging aspects of scientific writing for the respondents. Although not explicit in the linguistic labels, responses clearly indicate problems which directly pertain to structural, technical and functional semantic categories. This work therefore also expands writing awareness issues into the realm of macro genre, including the aforementioned implications to issues of register in each stage. By combining the results of the survey with the earlier descriptive work, a clear pattern emerges of both spotty awareness of issues in mechanics from a language, and of misunderstanding of the nature of the publication process as a whole.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

8.1 Research Conclusions

Findings from the four phases of analyses and triangulation of results respond to the original research questions formulated for this study. Results of the RA publication macro genre analysis reveals the boundaries within which specific editorial decisions take place, as a result of characteristic linguistic features and grammatical tools ensuring success and risk of failure in achieving publication. The core genres within the discourse event, i.e. RA, RRs and ARR, as well as a confirmation of threats that lead to termination of the RA's journey prior to publication, i.e. Non-Submission, Desk Rejection, Reject/Resubmit and Withdraw represent significant boundaries. Hence, the macro genre analysis of the dataset reveals these significant boundaries in realising possibilities of success despite a problematic route towards the ultimate goal of only seeing a quality publication to print. Further characteristics of linguistic features and grammatical tools that indicate risk of failure or possibility of success in achieving publication are confirmed with regard to semantic coding categories and results of this analysis that indicate aspects of structural, technical and functional metalinguistic issues which are prevalent within the dataset, specifically in reviewer reports recommending rejection of the RA. Analysis of survey responses further indicate levels of authors' awareness and understanding with regard to both macro generic and metalinguistic considerations that define the boundaries within which specific editorial decision take place.

Specific points of contention revealed by the RA publication macro genre analysis include the abovementioned confirmation of threats that lead to termination of the RA's journey prior to publication, i.e. Non-Submission, Desk Rejection, Reject/Resubmit and Withdraw. The multiple case studies have also drawn attention to success (and lack thereof) in scientific writing and RA publication in a Malaysian context, with significant emphasis on how novice writers may view the process of achieving publication via connecting with readers at various stages of publication. The analysis of both circuitous and unproblematic routes towards publication, contrasted against the third case of a rejected RA, reveals the significance of many

types of language considerations, most particularly the importance of negotiating tenor relationships at various macro-generic stages. At the latter junctures, each case varied significantly in view of considerations and reactions, resulting in differing levels of success. From my insider perspective, metalinguistic issues that emerged from the analysis of the semantic coding of RRs and ARR are significant considerations highlighting specific points of contention pertaining to RA publication. In short, treating metalinguistic issues within the structural, functional and technical semantic categories in combination with producing a comprehensive response to reviewers outline the generic expectations in scientific writing for publication. This finding not only contributes to the field of macro genre analysis but more practically, has the potential to expand existing knowledge while creating new knowledge, awareness and understanding. For instance, such information can be included in guidelines or training aimed at potential authors.

Potential contributions as a result of this research, towards improving the levels of awareness, understanding and engagement in cultural practices for RA publication among scientists in Malaysia include the analysis of pathway trends which resulted in a typical macro genre pattern comprising obligatory elements in the macro stages of Initiation, Evaluation and Conclusion coupled with variations to this typical macro genre pattern which reveal circuitous pathways in view of optional elements preceding or ensuing obligatory ones involving the possibility of iterations of both macro and micro stages. These instances directly contribute to bibliogenesis of the RA (Charlotte and Irwin, forthcoming) in reference to its successful iterations as a Submission, Revision and Acceptance for publication.

An RA that does not keep with the typical genre pattern in the stage of Initiation may lead to lack of publication or failure of the discourse event due to the optional elements of Non-submission or Desk Rejection. The latter however reflects failure upon participation in the macro generic stage of Initiation, observing the element of Submission while the former implies an outright circumvention of obligatory elements. Although the dataset does not comprise both these occurrences, an insider perspective allows for an indication of these optional elements. With reference to results and discussion on RAs in the subsequent stage of Evaluation, it is the obligatory element of Feedback that ultimately motivates an editorial decision on the RA in the macro stage of Conclusion. The obligatory element Decision may result in a Rejection or Resubmission of the RA, as well as the possibility of withdrawal by an author at this point that can terminate the RA's journey towards publication. Although pathway

trends within the dataset confirm various points of contention in the possible iterations of Evaluation and Conclusion stages, there is light at the end of the tunnel for the RAs achieving unconditional final acceptance for publication.

Semantic coding of the dataset and pattern analysis reveal semantic categories comprising metalinguistic issues that contribute towards a better understanding of expectations pertaining to the RA genre and the overarching discourse event, i.e. the publication macro genre. Importantly, these structural, technical and functional metalinguistic considerations play a role prior to the macro stage of Initiation and in the macro stage of Conclusion of the macro genre, i.e. before the obligatory elements of Submission and Revision. The focus on variables of overall proportions in RRs and ARRs, in combination with proportions of RRs recommending rejection of RAs for each metalinguistic code, indicate severity of these issues in view of instances within the dataset as well as their potential threat to publication. Analysis of the survey responses indicate participant perspectives as authors and reviewers in view of corresponding trends in levels of awareness, specifically relating to semantic coding categories as well as the macro genre analysis and contradiction likewise, in some cases serve to reflect distinct variations in levels of understanding and application of these metalinguistic issues. This finding confirms why scientists might be aware of requirements regarding RA publication yet fail to succeed to publish. Juxtaposition of qualitative responses on both challenging aspects of scientific writing for publication and useful reviewer feedback further supports categorisation of the semantic coding results upon analysis of the RRs in view of metalinguistic issues pertaining to aspects of structural, technical and functional semantic categories as well as macro genre issues which in turn validates an association with application of these metalinguistic issues and their theoretical implications to registerial variables.

A proposal in the form of a typology and pedagogical model for ARR, in navigating the RA publication macro genre as a dialogic discourse event is a recommendation from the four phases of analyses of this research. This typology represents a derivation from Eggins and Slade (2004) analysis of casual conversation, in its application to written text and dialogic discourse as the nature of this study reflects. Integration of results from the case studies, macro genre, semantic coding and survey results analyses validates a summary of this analysis in keeping with the dialogic nature of the RA publication macro genre.

8.2 Future Recommendation: A Dialogic Approach to the RA Publication Macro Genre

The corroboration of data analysis in the context of this research is aimed at an overall interpretation on multiple perspectives from the participants and processes involved, so that these writers could have a better understanding of the various readers of their work. Achieving a balance of awareness and understanding from the perspectives of registerial variables mapped onto language characteristics as indicated particularly in the review process allows assessment of which variables create risk in the social purpose of the RA publication discourse event. Success or failure is therefore often due to understanding tenor relations not just between the writer and the audience of the RA, but also of the writer and the editor, and the writer and reviewers.

Knowledge of interpersonal resources are thus crucial at all required stages of the discourse event (if it is to be successful): from the point of submission, to the editorial decision and peer review, towards revision prior to acceptance for consideration of publication. The power differences among participants, in the light of their roles and reactions manifested in language, are a linguistic measure of the discourse event boundaries and expectations towards a favourable outcome of the social purpose. Novice writers must understand this with regards to the threats and risks pertinent to success of the RA publication should they wish to reach their ultimate audience, the specialised readers of the journal.

SFL theorises that language is functional in order to make meanings in both social and cultural contexts of exchange (Eggins 1994). It infers the use of language as a semiotic process with choices in making meanings. In association with the present study, SFL provides a functional-semantic approach to language for the purpose of analysing RRs and ARRs as a formal written dialogue. SFL interrelates both language and context, considering the strata of context of culture (genre) and context of situation (register). Texts naturally occur either in both these contexts or within each other. However, the context of culture for a particular text is recognisable with a higher level of abstraction than its situational context. Accomplishing macro stages resulting from analysis of the RA publication macro genre, contributes to the overall goal and social purpose.

Eggins' (1994) theoretical framework for casual conversation analysis relates dimensions of tenor which is applicable to the dataset of RRs and ARRs. Both these core genres represent a formal situation, with unequal hierarchic power between reviewers and authors as well as

infrequent contact with a low affective involvement. Naturally occurring contexts of RRs and ARRs allow for understanding and application of discourse structure options in the framework. Both these genres also indicate the nature of a pragmatic conversation with the purpose of obtaining or providing information as a task oriented dialogue.

Semantic categories of reviewer feedback elucidate purposes and topic allocation in regards to this dialogue. Eggins and Slade (1997) specify four linguistic patterns representing interpersonal relationships in conversations, of which only discourse structure options relate to analysing the genres of RRs and ARRs. Operation of these patterns across turns are sequential and influence how participants choose to act on each other through choices of speech functions. Subsequent coding of ARRs reveal classification of interpersonal elements within the tenor of discourse. Integration of this aspect to the theoretical framework presents recommendations comprising a typology with options for the discourse structure of ARR.

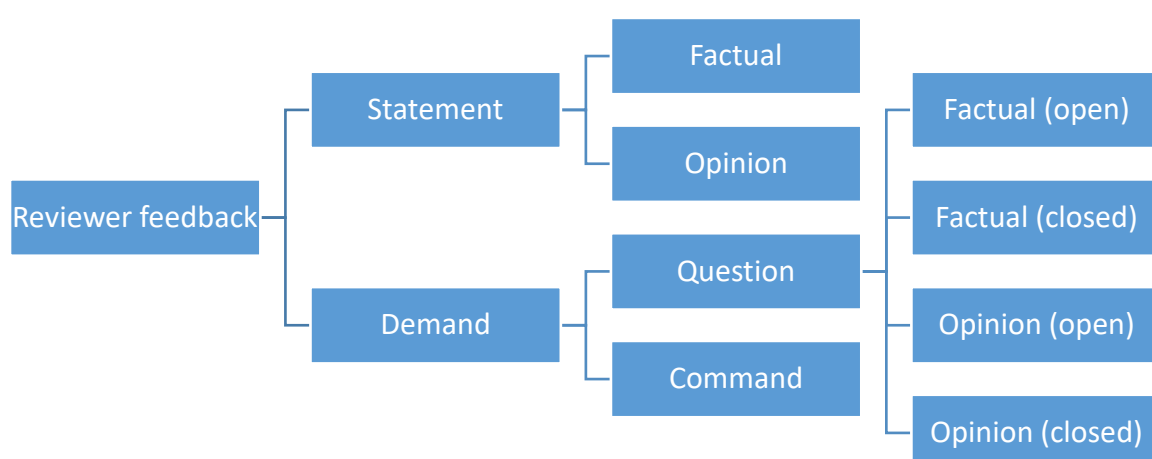


Figure 8.1: Discourse structure patterns in reviewer feedback (adapted from Eggins and Slade 2005)

Semantic coding of RRs reveal categories that construe specific metalinguistic issues and further associations with discourse functions as per the typology in Figure 8.1 and corresponding realisation statements in Table 8.1. RRs indicate specific discourse structure patterns that pre-determine purpose and topic allocation for the formal dialogue in writing with authors and the editor. Halliday (1994) interprets variables of interaction in association with speech roles of giving or demanding as an exchange process. Both these variables construe

reviewer feedback in the form of either a statement or demand which in turn initiates author responses towards supporting or confronting reviewer feedback, respectively. The typology and corresponding realisation statements provide for distinction between factual and opinion statements, otherwise further sub-classification of demands into open and closed questions or command categories within RRs. A comprehensive representation of reviewer feedback as speech functions correlates to discourse functions within the dataset.

Discourse Structure Pattern	Realisation Statements (RRs)
Reviewer feedback	+ COMMENTS TO AUTHOR
Statement : Factual	+ GIVE FACTUAL INFORMATION e.g. It is claimed in the article that there is no report about endogenous hormones in in-vitro culture of <i>Hevea brasiliensis</i> , which is against the facts, and shows a lack of understanding of the topic as well as lack of literature review.
Statement : Opinion	+ GIVE ATTITUDINAL OR EVALUATIVE INFORMATION e.g. Sulfurless system for curing carboxylated acrylonitrile butadiene (nitrile) rubber using zinc peroxide The title would benefit from the addition of either "cure" or "vulcanisation" after sulphur.
Demand : Question : Factual : Open	+ DEMAND FACTUAL INFORMATION e.g. This just contains a few quotes from earlier works. It fails to demonstrate a very deep understanding of the component and the benefits of its non-linear characteristics in a suspension system. A better historical perspective of the development of the rubber encapsulated helical spring is required in order for it to be clear what the starting point and motivation of the current study is. What aspects of the design manufacture do you aim to improve and why or what new understanding do you hope to acquire?
Demand : Question : Factual : Closed	+ DEMAND CONFIRMATION/AGREEMENT WITH FACTUAL INFORMATION e.g. The introduction is too general mentioning studies on other species when several papers published on rubber on the research topic are not mentioned ([1-5]). The objectives of the present study are not clearly established at the end of the introduction.
Demand : Question : Opinion : Open	+ DEMAND OPINION INFORMATION (E&S p104) <i>e.g. There should be figures depicting each of the four proposed kinetic treatments. This will reveal that the data do not show a linear fit to any of them</i>
Demand : Question : Opinion : Closed	+ DEMAND AGREEMENT WITH OPINION INFORMATION <i>e.g. It is questionable whether any zinc peroxide remained in the films after drying - the authors suggest that decomposition occurs to generate oxygen radicals. Some comment should be made regarding the likely extent of decomposition under the thermal history imposed during the</i>

	<i>drying regime. The authors do not mention that zinc peroxide has been used as an antiseptic, which would argue that the large majority has been decomposed and certainly would suggest that it cannot be described as "more tolerable by cells".</i>
Demand : Command	+ DEMAND COMPLIANCE e.g. I recommend the authors to familiarize themselves with the literature on the extremely complicated technology of rubber sponge/foam manufacturing, e.g. ample information published in the former RAPRA journal: Cellular Polymers; e.g. J.W.M. Noordermeer, Cellular Polymers <u>16</u> , 331-348 (1997). This might help to properly interpret many of the observed phenomena.

Table 8.1: Realisation statements for the discourse structure in RRs

In that regard, authors' recognition of the orientation in discourse structure of reviewer feedback allows for careful consideration in responding appropriately. The following typology in Figures 8.2 and 8.3 introduces options for authors to either "support" or "confront" reviewer feedback with justifications, while steering the formal dialogue in writing towards success of the macro genre. However, each of these options coexist with limitations depending on the nature of reviewer feedback. If an author is dealing with responding to a "factual statement", only the option to "support" is applicable as confronting a factual statement by a subject specialist may disallow successful progression along the macro generic pathway. In contrary, an "opinion statement" allows for either discourse structure option of "support" or "confront", accordingly.

When dealing with demand questions for a "factual (open)" discourse structure, author's response should involve the element of "support" prior to the next level of options available in accounting for further details to answer the question. A "factual (closed)" demand question instead limits the author's response option considerably towards "support" and "maintain" or "finish reply" by providing the specific details to reviewer requests. In responding to a reviewer's demand question involving the "opinion (open)" or "opinion (closed)" discourse structures, authors have options to either "support" or "confront" the recommendation, while the latter structure would indicate specific details and limit the author's options in responding contrarily. The final discourse structure for reviewer feedback orientation is that of a "demand: command" which does not directly limit author's response options, however involves an element of risk if the author choses to "confront" rather than "support" this style of recommendation.

The typology of ARR with three levels of discourse structure options emulates a guideline and reference in achieving success with this genre and formal dialogue in writing. These

choices will contribute towards allowing for a successful progression along the macro genre pathway in the macro stage of Conclusion. Figures 8.2 and 8.3 depict choices and options available for author's to "support" and "confront" reviewer feedback, respectively, with reference to the discourse structure options in Figure 8.1 above.

In selecting the first level and discourse structure option to "support", authors choose to engage in the dialogue with reviewers by means of the choices available in Figure 8.1. The second level involves choices to sustain the dialogue by means of either "track", "expand", "develop", "maintain", "conclude" or "finish reply". All 6 options at this level attempt to either continue or react to reviewer feedback. The discourse structure to sustain and continue only relates to the option of "expand", where the third level of choices to "elaborate", "enhance", or "extend" could involve responses which either append or prolong the issue, respectively. Hence the discourse structure for each choice with the option of "expand" is sustain: continue: append/prolong. The remaining options involve the discourse structure of sustain: react: rejoinder/respond. When authors choose to "track", the discourse structure sustain: react: rejoinder applies to the third level of choices namely, "confirm", "probe", "clarify" or "check" with reference to a particular reviewer feedback.

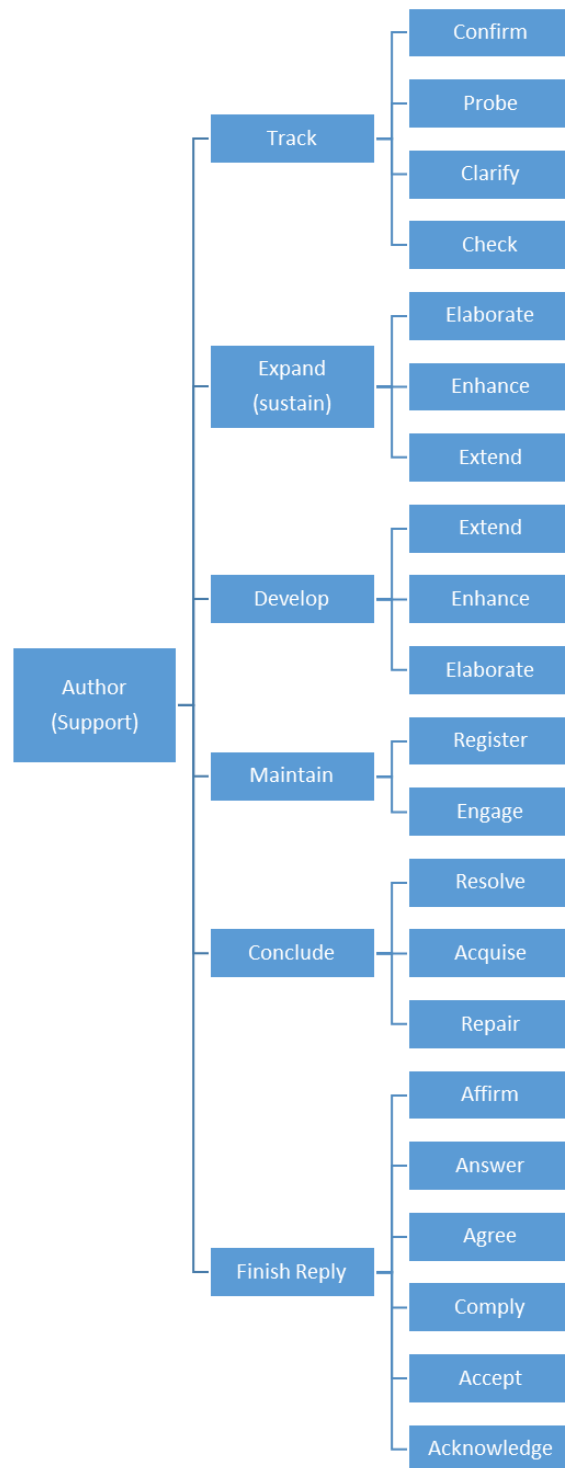


Figure 8.2: Author’s response with discourse structure options to “support” reviewer feedback (adapted from Eggins and Slade 2005)

In choosing to “develop”, the discourse structure sustain: react: respond applies to the choices of “extend”, “enhance” or “elaborate” the response to an issue. The choice to “maintain” involves the same discourse structure of sustain: react: respond with choices to either “engage” or “register” with the reviewer comment. The following option to “conclude”

involves the discourse structure of sustain: react: rejoinder, allowing for choices to “resolve”, “acquiesce” or “repair” the issue at hand. The final option of “support” in responding to reviewers is that of “finish reply” with a discourse structure of sustain: react: respond including choices to “affirm”, “answer”, “agree”, “comply”, “accept” or “acknowledge”. The discussion on choices to “support” in responding to reviewers is applicable to all discourse structure options of reviewer feedback (Figure 8.1).

Figure 8.3 provides a typology of choices for authors to successfully “confront” reviewer feedback, involving only discourse structure options of sustain: react: rejoinder/respond. These choices are predominantly applicable to reviewer feedback and corresponding discourse structure options of statement: opinion, demand: command, and demand: question: opinion (open/closed).

The second level of choices for authors to “confront” reviewer feedback include “reply”, “challenge” or “disengage”. Of these, the discourse structure option sustain: react: rejoinder only applies to “challenge”, involving the third level of choices between “rebound”, “detach”, “counter”, “non-conclude”, “re-challenge”, “refute” or “unresolve”. Both choices to “reply” and “disengage” apply the discourse structure option of sustain: react: respond, with the former having a third level of choices between “disagree”, “non-comply”, “decline”, “withhold”, “disavow” or “contradict”.

Appropriate selection of choices at each level of the typology and compliance to the corresponding discourse structure options will allow for successful negotiation of tenor relationships. Understanding tenor relations between the author and editors/reviewers as the initial evaluative readers of the RA potentially contributes to the success of the macro stage of Conclusion and the overall goal of the macro genre. In turn, awareness and knowledge of these interpersonal resources are crucial to the genre of author’s response to reviewers in view of achieving final acceptance for publication.

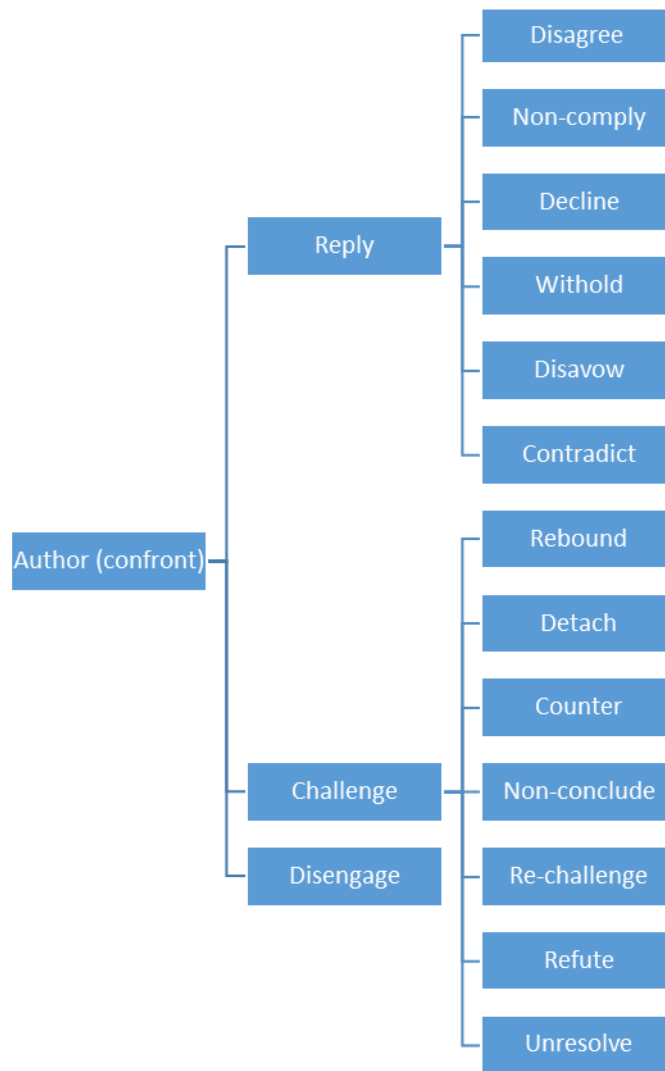


Figure 8.3: Author's response with discourse structure options to "confront" reviewer feedback (adapted from Eggins and Slade 2005)

As a recommendation resulting from this analysis, adaptation of the theoretical framework by Eggins and Slade (2005) on analysing casual conversation contributes towards representing potential choices in the discourse structure of RRs and ARRs. In that regard, the description of a typology to support the analysis of RRs and ARRs will reveal preferred and dispreferred options applicable to authors, as participants of the discourse event. This typology stereotypes reviewer comments and approaches in responding to reviewers considering potential consequences of the overarching discourse event.

8.3 Limitations of this Study

The findings from each phase of the research would contribute to the cultural practices of scientific writing and RA publication among Malaysian scientists in particular, and to linguists as well as the wider discourse community globally. Although the results obtained in this study are largely generalisable to the publication process involving rubber research especially in the Malaysian context, an important consideration is the scope of rubber research which encompasses the core science domains of biology, chemistry and physics as well as JRR's international ranking, authorship, editorial board, reviewers and target audience. Both the dataset and findings thus imply transferability to scientific RA publications in general and potential limitations or variations for humanities publications, accordingly.

These research findings are also subject to limitations of the dataset which comprise editorial correspondences for a pool of 44 RAs and their iterations, as well as 139 RRs and 39 ARRs. Further data include feedback from 60 survey participants. These numbers are representative of the results and findings to a large extent, while indicating potential points of contention from a macro generic perspective with regard to scientific writing and RA publication. Integration of both survey and semantic coding results strongly support future recommendations as an outcome of the various phases of analysis in this study. Inferences from survey feedback projects a valid confirmation in both theory (register variables) and application (semantic coding, macro genre analysis and case studies) in reference to metalinguistic issues. Trend in levels of awareness emerging from survey responses reveal variations across participant categories. The impact of both knowledge and application of metalinguistic considerations and a dialogic approach to the macro genre contributes to achieving success with RA publication.

REFERENCES

- Adnan, Z., (2009) Some potential problems for research articles written by Indonesian academics when submitted to international English language journals. *The Asian EFL Journal Quarterly*, 11(109), pp.107–125.
- Ahmad, U.K., (1997) *Scientific research articles in Malay: A situated discourse analysis*. (Unpublished doctoral dissertation). University of Michigan US.
- Alatas, S.F., (2001) Alternative Discourses in Southeast Asia. *SARI: Jurnal Alam dan Tamadun Melayu*, 19, pp.49–67.
- Alfonso, F. (2010) The “peer-review” process in biomedical journals: characteristics of “Elite” reviewers. *Neurologia* 25 (9), 521-529.
- Al-Khairiy, M.A., (2013) Saudi English-Major Undergraduates’ Academic Writing Problems: A Taif University Perspective. *English Language Teaching*, 6(6), p.1. Available at: <http://dx.doi.org/10.5539/elt.v6n6p1>.
- Altbach, P., (1978) Scholarly publishing in the Third World. *Library Trends*, 26(4), pp.489–504.
- Ancker, W., (2000) Errors and corrective feedback: Updated theory and classroom practice. *English Teaching Forum*, 38(4), pp.20–24.
- Anthony, L., (1999) Writing research article introductions in software engineering: How accurate is a standard model? *Professional Communication, IEEE Transactions*, 42(1), pp.38–46. Available at: <http://dx.doi.org/10.1109/47.749366>.
- Artemeva, N., (2008) Toward a unified social theory of genre learning. *Journal of Business and Technical Communication*, 22(2), pp.160–185.
- Atkinson, D., (1992) The Evolution of Medical Research Writing from 1735 to 1985: The Case of the Edinburgh Medical Journal. *Applied Linguistics*, 13(4), pp.337–374.

- Baker, M., (1993) Corpus linguistics and translation studies: Implications and applications. In Baker, M., Francis, G. and Tognini-Bonelli, E. eds. *Text and Technology: in Honour of John Sinclair*. Amsterdam: Benjamins, pp. 233–250.
- Baker, M., (1995) Corpora in translation studies: An overview and some suggestions for future research. *Target*, 7(2), pp.223–243.
- Baker, M., (1996) Corpus-based translation studies: The challenges that lie ahead. In Somers, H. L. eds. *Terminology, LSP and Translation: Studies in Language Engineering in Honour of Juan C. Sager*. Amsterdam: Benjamins, pp. 175–186.
- Bakhtin, M., (1981) *The Dialogic Imagination: Four Essays*, M. T. Emerson, C. and Holquist, Trans., Austin: University of Texas Press.
- Banks, D., (1991) Some Observations Concerning Transitivity and Modality in Scientific Writing. *Language Sciences*, 13(1), pp.59–78.
- Banks, D., (1994) Clause organization in the scientific journal article. *ALSED-LSP*, 17(38), pp.4–16.
- Banks, D., (2005a) Emerging scientific discourse in the late seventeenth century. A comparison of Newton's Optiks, and Huygens' Traite de la lumiere. *Functions of Language*, 12(1), pp.65–86.
- Banks, D., (2005b) On the historical origins of nominalized process in scientific text. *English for Specific Purposes*, 24(3), pp.347–357.
- Banks, D., (2006) Referring to others in the scientific journal article. A brief history. *Linguistics and the Human Sciences*, 2(3), pp.329–353.
- Banks, D., (2008) *The Development of Scientific Writing. Linguistic Features and Historical Context*, London, Oakville: Equinox.
- Bardi, M. (2015) Learning the practice of scholarly publication in English – A Romanian perspective. *English for Specific Purposes* 37, 98-111.

Barton, E., (2004) What writing does and how it does it: An introduction to analyzing texts and textual practices. In *Linguistic Discourse Analysis: How the Language in Texts Works*. pp. 57–82.

Basturkmen, H., (2012) A genre-based investigation of discussion sections of research articles in Dentistry and disciplinary variation. *Journal of English for Academic Purposes*, 11(2), pp.134 – 144.

Bataineh, R.F., (2005) Jordanian undergraduate EFL students' errors in the use of the indefinite article. *Asian EFL Journal*, 7(1), pp.56–76.

Bawarshi, A.S. and Reiff, M.J., (2010) *Genre: An introduction to history, theory, research, and pedagogy. (in pdf format)*, Indiana: Parlor Press & the WAC Clearinghouse. Available at: Retrieved March 28, 2015, from http://wac.colostate.edu/books/bawarshi_reiff/

Bazerman, C., (1984a) Modern evolution of the experimental report in physics: spectroscopic articles in Physical Review, 1893-1980. *Social Studies in Science*, 14(2), pp.163–196.

Bazerman, C., (1984b) The Writing of Scientific Non-Fiction: Contexts, Choices and Constraints. *Pre/Text*, 5(1), pp.39–74.

Bazerman, C., (1988) *Shaping written knowledge*, Madison: University of Wisconsin Press.

Bazerman, C., (1994) *Systems of genres and the enactments of social intentions*. In *Genre and the new rhetoric* Freedman, A. and Medway, P., eds., London: Taylor & Francis.

Belcher, D.D., (2007) Seeking Acceptance in an English-Only Research World. *Journal of Second Language Writing*, 16, pp.1–22.

Benfield, J. and Feak, C., (2005) *Workshop: Corresponding with Reviewers and Editors*, Chicago, IL.

- Berkenkotter, C., and Huckin, T., (1995) *Genre knowledge in disciplinary communication*, Hillsdale, NJ: Lawrence Erlbaum.
- Bhaskar, C. V., and Soundiraraj, S., (2013) A Study on Change in the Attitude of Students towards English Language Learning. *English Language Teaching*, 6(5), p.111. Available at: <http://dx.doi.org/10.5539/elt.v6n5p111>.
- Bhatia, V., (1993) *Analysing genre: Language use in professional setting*, London: Longman.
- Bhatia, V.K., (2002) *A generic view of academic discourse*. In *Academic Discourse* J. Flowerdew, eds., Harlow: Longman.
- Bhatia, V., (2004) *World of written discourse: A genre-based view*, London: Continuum.
- Biber, D., (1988) *Variation across speech and writing*, New York, NY: Cambridge University Press.
- Biber, D., (1990) Methodological issues regarding corpus-based analyses of linguistic variation. *Literary and Linguistic Computing*, 5, pp.257–269.
- Biber, D., (1995) *Dimensions of Register Variation. A cross linguistic comparison*, Cambridge: Cambridge University Press.
- Biber, D., (1996) Investigating Language Use through Corpus-Based Analysis of Association Patterns. *International Journal of Corpus Linguistics*, 1(2), pp.171–197.
- Biber, D., (2006) Methodological issues in quantitative vocabulary analyses. In *University Language: A Corpus-based Study of Spoken and Written Registers*. Amsterdam, Philadelphia: John Benjamins Publishing, pp. 251–257.
- Biber, D., Conrad, S. and Reppen, R., (1998) *Corpus Linguistics. Investigating Language Structure and Use*, Cambridge: Cambridge University Press.
- Biber, D. and Conrad, S., (2009) *Register, Genre and Style*, Cambridge: Cambridge University Press.

- Biber, D. and Finegan, E., (1989) Drift and the evolution of English style: a history of three genres. *Language*, 65(3), pp.487–517.
- Biber, D. and Finegan, E., (1992) The linguistic evolution of five written and speech-based English genres from the 17th to the 20th centuries. In Rissanen, M., Ihalainen, O., Nevalainen, T. and Taavitsainen, I. eds. *History of Englishes: New Methods and Interpretations in Historical Linguistics*. Berlin: Mouton de Gruyter, pp. 688–704.
- Biber, D. and Finegan, E. (eds.), 1994. *Sociolinguistic Perspectives on Register*, New York, Oxford: Oxford University Press.
- Bizzell, P., (1992) *Academic discourse and critical consciousness*, Pittsburgh, PA: University of Pittsburgh Press.
- Bloor, M., and Bloor, T., (1995) *The functional analysis of English: A Hallidayan approach*, London: Arnold.
- Bornmann, L., Mutz, R. and Daniel, H.D., (2010) The usefulness of peer review for selecting manuscripts for publication: A utility analysis taking as an example a high-impact journal. *PLoS ONE*, 5(12), pp. 1-10.
- Brett, P., (1994) A genre analysis of the result sections of sociology articles. *English for Specific Purposes*, 13(1), pp.47–56.
- Brown, H.D., (1980) *Principles of Language Learning and Teaching*, New Jersey: Prentice-Hall Inc.
- Brown, H.D., (1994) *Teaching by Principles: Interactive language teaching methodology*, New York: Prentice Hall Regents.
- Brown H. D., (2001) *Principle and Language and Teaching*. 2nd ed., San Francisco: San Francisco State University.
- Brown, J.D., (2001) *Using Surveys in Language Programs*, Cambridge: Cambridge University Press.
- Burnham, J.C., (1990) The evolution of editorial peer review. *JAMA*, 263, pp.1323–29.

- Campanario, J.M., (1998) Peer review for journals as it stands today - part 1. *Science Communication*, 19, pp.181–211.
- Canagarajah, S., (1996) “Nondiscursive” requirements in academic publishing, material resources of periphery scholars, and the politics of knowledge production. *Written Communication*, 13(4), pp.435–472.
- Canagarajah, S., (2002) *A geopolitics of academia writing*, Pittsburgh, PA: University of Pittsburgh Press.
- Candling, R.B., (2001) *Vocabulary and language teaching*, New York: Longman.
- Cargill, M., and O’Connor, P., (2009) *Writing Scientific Research Articles: Strategy and Steps*, NJ: Wiley-Blackwell.
- Charlotte, V. and Irwin, D. (Forthcoming). The Scientific Research Article Publication Process as a Macro-Genre: outlining the parameters of successful and unsuccessful communication between the writers and the gatekeeping readers. *Specialized Discourses and their Readerships*. The M.A.K. Halliday Library Functional Linguistics Series (Eds. Chang, C & Huang, G. ISSN: 2198-9869)
- Chen, H.C., (1998) A contrastive analysis of the language errors made by the Chinese students of English as a second/foreign language. *Journal of Wu-Feng Applied Linguistics*, 6, pp.224–237.
- Chen, H.C., (2000) Error Analysis of some features of English article usage. *Journal of Wu-Feng Applied Linguistics*, 8, pp.282–296.
- Cho, D.W. (2009) Science journal paper writing in an EFL context: The case of Korea. *English for Specific Purposes*, 28.4, 230-239.
- Christenson, J. A. and Sigelman, L., (1985) Accrediting knowledge: journal stature and citation impact in social science. *Social Science Quarterly*, 66, pp.964–975.
- Christie, F., and Martin, J., (1997) *Genre and institutions: Social processes in the workplace and school*, London: Cassell.

- Cicchetti, D.V., (1991) The reliability of peer review for manuscript and grant submissions: a cross-disciplinary investigation. *Behavioral and Brain Sciences*, 14, pp.119–135.
- Cloran, C., (1995) Defining and relating texts segments: Subject and theme in discourse. In Hasan, R. and Fries, P. eds. *On subject and theme. A discourse functional perspective*. Amsterdam: Benjamins Publishing, pp. 365–403.
- Coe, R., (2002) *The new rhetorical of genre: Writing political briefs*. In *Genre in the classroom: Multiple perspectives* A. Johns, eds., Mahwah, NJ: Lawrence Associates.
- Collins, L., (2007) L1 differences and L2 similarities: Teaching verb tenses in English. *ELT Journal*, 61(4), pp.295–304.
- Coniam, D., (2011) Systematising System: one reviewer's analysis of the review process. *System*, 39, pp.539–553. Available at: <http://dx.doi.org/10.1016/>.
- Coniam, D., (2012) Exploring reviewer reactions to manuscripts submitted to academic journals. *System*, 40, pp.544–553. Available at: <http://dx.doi.org/10.1016/j.system.2012.10.002>.
- Conrad, S., (1996) Investigating academic texts with corpus-based techniques: an example from biology. *Linguistics and Education*, 8, p.299-326.
- Cook, C.K., (2002) Layered literacies: a theoretical frame for technical communication pedagogy. *Technical Communication Quarterly*, 11(1), pp.5–29. Available at: http://dx.doi.org/10.1207/s15427625tcq1101_1.
- Corder, S.P., (1967) The significance of learners' errors. *IRAL*, 5, pp.161–170.
- Corder, S.P., (1971) *Idiosyncratic Dialects and Error Analysis*, Heidelberg: Groos.
- Corder, S.P., (1974) *Error Analysis: Perspectives on second language acquisition*, London: Longman.

Cotos, E., Huffman, S. and Link, S. (2017) A move/step model for methods sections: Demonstrating Rigour and Credibility, *English for Specific Purposes*, 46, p.90-106, ISSN 0889-4906, <https://doi.org/10.1016/j.esp.2017.01.001>.

Couture, B., (1985) A systematic network for analyzing writing quality. In Benson, J. D. and Greaves, W. S. eds. *Systemic perspectives on discourse*. Norwood, NJ: Ablex, pp. 67–87.

Creswell, J.W., (2005) *Planning, Conducting and Evaluating Quantitative and Qualitative Research*, Upper Saddle River, N.J.: Pearson Prentice Hall.

Creswell, J.W., (2003) *Research Design: Qualitative, Quantitative, and Mix Methods Approaches.*, Thousand Oaks, California: Sage.

Darus, S., (2009) Error Analysis of the Written English Essays of Secondary School Students in Malaysia: A Case Study. *European Journal of Social Sciences*, 8(3), pp.483–495.

Dörnyei, Z., (2007) *Research Methods in Applied Linguistics* 1st ed., Oxford: Oxford University Press.

Dressen-Hammouda, D., (2008) From novice to disciplinary expert: Disciplinary identity and genre mastery. *English for Specific Purposes*, 27, pp.233– 252.

Dressen-Hammouda, D. (2014) Measuring the voice of disciplinarity in scientific writing: A longitudinal exploration of experienced writers in geology. *English for Specific Purposes* 34, 14-25.

Dudley-Evans, T. and St John, M.J., (1998) *Developments in English for Specific Purposes*, Cambridge: Cambridge University Press.

Duenos, P. (2012) Getting research published internationally in English: An ethnographic account of a team of Finance Spanish scholars' struggles. *Iberica* 24, 139-156.

Duff, P., (2006) Beyond Generalizability: Contextualization, Complexity and Credibility in Applied Linguistics Research. In P. Chalhoub-Deville, M., Chapelle, C.A. and Duff, ed. *Inference and Generalizability in Applied Linguistics: Multiple Perspectives*. Amsterdam: John Benjamins.

Duff, P., (2008) *Case Study Research in Applied Linguistics*, Mahwah, NJ: Laurence Erlbaum.

Dulay, C., and Burt, K., (1974) Error and strategies in child second language acquisition. *TESOL Quarterly*, 8, pp.129–138.

Eggs, S., (1994) *An introduction to systemic functional linguistics*, London: Pinter Publishers.

Eggs, S., (2004) *An introduction to systemic functional linguistics*, London: Pinter Publishers.

Eggs, S. and Slade, D. (1997) *Analysing Casual Conversation*, London: Cassell.

Eggs, S. and Slade, D. (2005) *Analysing Casual Conversation*, London: Equinox.

Ellis, R., (1996) *The study of second language acquisition*, London: Oxford University Press.

Ellis, R. and Barkhuizen, G., (2005) *Analysing Learner Language*, Oxford: Oxford University Press.

Fairclough, N., (2003) *Analysing discourse: Textual analysis for social research*, London: Routledge.

Fang, Y.C., (1999) Teaching English verb tenses to Chinese EFL students. *Journal of Kuen-Shan Institute of Technology*, (2), pp.119–123.

Fassinger, R.E., (2005) Paradigms, Praxis, Problems and Promise: Grounded Theory in Counselling Psychology Research. *Journal of Counselling Psychology*, 52(2), pp.155–166.

- Feak, C., (2009) Negotiating Publication: Author Responses to Peer Review of Medical Research Articles in Thoracic Surgery. *Revista Canaria de Estudios Ingleses*, 59, pp.17–34.
- Firth, J.R., (1950) Personality and Language in Society. *Sociological Review*, XLII, p.2.
- Fortanet, I., (2008) Evaluative Language in Peer Review Referee Reports. *Journal of English for Academic Purposes*, 7, pp.27–37.
- Fox, M., (1983) Publication productivity among scientists: A critical review. *Social Studies of Science*, 13, pp.285–305.
- Garfield, E., (1979) Current Contents: its impact on scientific communication. *Interdisciplinary Science Reviews*, 4, pp.318–323.
- Garfield, E., (1994) The concept of Citation Indexing: a unique and innovative tool for navigating the research literature. *Current Contents*, 1(1), pp.3–4.
- Garfield, E. and Irving, H.S., (1993) KeyWords PlusTMAAlgorithmic Derivative Indexing. *Journal of the American Society for Information Science*, 44(5), pp.298–299.
- Ghadessy, M., (1980) Implications of Error Analysis for second/foreign language acquisition. *Language Teaching*, 189(2), pp.3–104.
- Gillham, B., (2000) *Developing a Questionnaire*, London: Continuum.
- Gilquin, G. and Gries, S.T., (2009) Corpora and experimental methods: A state-of-the-art review. *Corpus Linguistics and Linguistic Theory*, 5(1), pp.1–26.
- Glaser, B.G., (1992) *Basics of Grounded Theory Analysis: Emergence vs. Forcing*, Mill Valley, California: Sociology Press.
- Gledhill, C.J., (2000a) *Collocations in Science Writing*, Tübingen: Gunter Narr Verlag.
- Gledhill, C.J., (2000b) The discourse function of collocation in research article introductions. *English for Specific Purposes*, 19(2), pp.115–135.

- Gosden, H., (1995) Success in research article writing and revision: A social-constructionist perspective. *English for Specific Purposes*, 14(1), pp.37–57.
- Gosden, H., (2001) “Thank you for your critical comments and helpful suggestions”: compliance and conflict in authors’ replies to referees’ comments in peer reviews of scientific research papers. *Iberica*, 3, pp.3–17.
- Gosden, H., (2003) Why Not Give the Full Story?’ Functions of Referees’ Comments in Peer Reviews of Scientific Research Papers. *Journal of English for Academic Purposes*, 2(2), pp.87–101.
- Grabe, W., (1987) *Contrastive rhetoric and text-type research*. In *Writing across languages: Analysis of L2-Texts* Connor, U. and Kaplan, R. B., eds., Reading: Addison-Wesley.
- Greaves, S., Scott, J., Clarke, M., Miller, L., Hannay, T., Thomas, A. and Campbell, P., (2006) Overview: Nature’s Trial of Open Peer Review. *Nature*. Available at: n. pag.
- Gries, S.T., (2010) Corpus linguistics and theoretical linguistics. A lovehate relationship? Not necessarily... *International Journal of Corpus Linguistics*, 15(3), pp.327–343.
- Halliday, M.A.K., (1959) The secret history of the mongols. In *Studies in Chinese Language, Eighth volume in the collected works of M.A.K. Halliday*. London: Continuum, pp. 5 – 171.
- Halliday, M.A.K., (1973) *Explorations in the functions of language*, London: Edward Arnold.
- Halliday, M.A.K., (1975) *Learning how to mean*, London: Edward Arnold.
- Halliday, M.A.K., (1978) *Language as social semiotic: The social interpretation of language and meaning*, London: Edward Arnold.
- Halliday, M.A.K., (1985a) *An Introduction to Functional Grammar*, London: Arnold.
- Halliday, M.A.K., (1985b) *Spoken and Written Language*, Victoria: Deakin University.

Halliday, M.A.K., (1992) Language as system and language as instance: The Corpus as a theoretical construct. In *Directions in Corpus Linguistic*. In Svartvik, J. eds. *Proceedings of Nobel Symposium 82, Stockholm, 4-8 August 1991*. ACM, Berlin, New York: Mouton de Gruyter.

Halliday, M.A.K., (1993) On the language of Physical Science. In Halliday, M. A. K. and Martin, J. R. eds. *Writing Science: Literacy and Discursive Power*. London, Washington D.C.: The Falmer Press, pp. 54–68.

Halliday, M.A.K., (1998) Things and relations: Regrammaticising experience as technical knowledge. In Martin, J. R. and Veel, R. eds. *Reading science: Critical and functional perspectives on discourses of science*. London: Routledge.

Halliday, M.A.K., (2007) *The Language of Science* 5th ed. Webster, J. J. ed., China: Peking University Press.

Halliday, M. A. K. and Hasan, R., (1976) *Cohesion in English*, London: Longman.

Halliday, M. A. K. and Hasan, R., (1985) *Language, context and text: Aspects of language in a social-semiotic perspective*, Geelong: Deakin University Press.

Halliday, M. A. K. and Hasan, R., (1989) *Language, context and text: Aspects of language in a social-semiotic perspective*, Oxford: Oxford University Press.

Halliday, M. A. K. and Matthiessen, C., (2004) *An introduction to functional grammar*. 3rd ed., London: Arnold.

Halliday, M. A. K. and Matthiessen, C.M.I.M., (2006) *Construing Experience Through Meaning. A Language-based Approach to Cognition*, London, New York: Continuum.

Halliday, M. A. K. and Matthiessen, C.M.I.M., (2014) *Halliday's Introduction to Functional Grammar* 4th ed., London: Routledge.

Hasan, R., (1977) *Text in the Systemic Functional Model*. In *Current Trends in Text Linguistics*. Dressler, W. eds., Berlin: Walter de Gruyter.

- Hasan, R., (1979) *On the Notion of Text. In Text vs Sentence: basic questions of textlinguistics*, J. S. Petofi [ed.], 369 – 390. Hamburg: Helmut Buske.
- Hasan, R., (1995) The conception of context in text. In Fries, P. and Gregory, M. eds. *Discourse in society: Systemic functional perspectives*. Norwood, NJ: Ablex, pp. 183–283.
- Haverkamp, B.E., (2005) Ethical Perspectives on Qualitative Research in Applied Psychology. *Journal of Counselling Psychology*, 52(2), pp.146–155.
- He, A.W., (1993) Language use in peer review texts. *Language in Society*, 22(3), pp.403–420.
- Hemlin, S. and Rasmussen, S.B., (2006) The shift in academic quality control. *Science Technology & Human Values*, 31, pp.173–198.
- Heydari, P. and Bagheri, M.S., (2012) Error Analysis: Sources of L2 Learners' Errors. *Theory and Practice in Language Studies*, 2(8), pp.1583–1589.
- Ho, M. (2017) Navigating scholarly writing and international publishing: Individual agency of Taiwanese EAL doctoral students. *Journal of English for Academic Purposes* 27, 1-13.
- Holtz, M., (2011) *Nominalisation in scientific discourse: A corpus-based study of abstracts and research articles*, Germany: University of Darmstadt.
- Hood, S., (2010) *Appraising research: Evaluation in academic writing*, London: Palgrave Macmillan.
- Hopkins, A. and Dudley-Evans, A., (1988) A genre-based investigation of the discussion sections in articles and dissertations. *English for Specific Purposes*, 7, pp.113–122.
- Horobin, D.F., (1990) The philosophical basis of peer review and the suppression of innovation. *JAMA*, 263, pp.1438–41.

- Huang, J. (2010) Publishing and learning writing for publication in English: Perspectives of NNES PhD students in science. *Journal of English for Academic Purposes* 9, 33-44.
- Huang, J. (2017) What do subject experts teach about writing research articles? An exploratory study. *Journal of English for Academic Purposes* 25, 18-29.
- Hunston, S., (1993) Evaluation and ideology in scientific writing. In Ghadessy, M. eds. *Register Analysis. Theory and Practice*. London, New York: Pinter Publishers, pp. 57–73.
- Hyland, K., (1998) *Hedging in scientific research articles*, Amsterdam: John Benjamins.
- Hyland, K., (1999) Talking to students: metadiscourse in introductory coursebooks. *English for Specific Purposes*, 18(1), pp.3–26.
- Hyland, K., (2000) *Disciplinary discourses: Social interactions in academic writing*, London: Longman.
- Hyland, K., (2002a) Academic argument: Induction or interaction? *Revista Canaria de Estudios Ingleses*, 44, pp.29–45.
- Hyland, K., (2002b) Authority and invisibility: Authorial identity in academic writing. *Journal of Pragmatics*, 34, pp.1091–1112.
- Hyland, K., (2002c) *Teaching and researching writing*, Harlow: Pearson Education.
- Hyland, K., (2003) Genre-based pedagogies: A social response to process. *Journal of Second Language Writing*, 12, pp.17–29.
- Hyland, K., (2008) Academic clusters: text patterning in published and postgraduate writing. *International Journal of Applied Linguistics*, 18(1), pp.41–62.
- Hyland, K., (2009) *Academic Discourse. Continuum Discourse Series*, London, New York: Continuum.

- Hyland, K. (2015) Genre, discipline and identity. *Journal of English for Academic Purposes* 19, 32-43.
- Hylon, S., (1996) Genre in three traditions: Implications for ESL. *TESOL Quarterly*, 30, pp.693–722.
- Hymes, D., (1974) *Foundations in sociolinguistics: An ethnographic approach*, Philadelphia: University of Pennsylvania Press.
- Inman, M., (1978) Lexical analysis of scientific and technical prose. In Trimble, T., Trimble, M. and Drobnic, K. eds. *English for specific purposes: Science and technology*. Corvallis OR: English Language Institute, Oregon State University, pp. 242–256.
- Irwin, D. and Joavanovic-Krstic, V., (forthcoming) *A Functional Grammar Guide for Writers*, London: Equinox P.
- James, C., (1998) *Errors in language learning and use: Exploring Error Analysis*, London: Longman.
- Jefferson, T., Wager, E. and Davidoff, F., (2002) Measuring the Quality of Editorial Peer Review. *JAMA*, 287(21), pp.2786–2790.
- Jiang, M.C., (1995) An analysis of Chinese learners' errors in prepositions. *Journal of National Chiayi Institute of Agriculture*, 41, pp.187–201.
- Johnson, D.M., (1992) Compliments and Politeness in Peer-Review Tests Author. *Applied Linguistics*, 13(1), pp.51–71.
- Jonson, P., (1992) Cohesion and coherence in compositions in Malay and English. *RELC Journal*, 23(2), pp.1–17.
- Jordan, R.R., (1997) *English for academic purposes*, Cambridge: Cambridge University Press.
- Jusoff, K., and Samah, H.S.A.A., (2010) Reconciling Challenges and Opportunities in Academic Scientific Writing. *Academic Leadership Journal*, 8(3), pp.85–87.

- Kazemian, B., Behnam, B. and Ghafoori, N., (2013) Ideational Grammatical Metaphor in Scientific Texts: A Hallidayan Perspective. *International Journal of Linguistics*, 5(4), p.146. Available at: <http://www.macrothink.org/journal/index.php/ijl/article/view/4192>.
- Kelle, U., (2004) Computer-assisted Qualitative Data Analysis. In D. Seale, C., Gobo, G., Gubrium, J.F. and Silverman, ed. *Qualitative Research Practice*. London: Sage.
- Khalil, A., (1989) A study of cohesion and coherence in Arab EFL students' writing. *System*, 17(3), pp.359–371.
- Khodabandeh, F., (2007) Analysis of students' errors: The case of headlines. *The Asian ESP Journal*, 3(1), pp.6–21.
- Kim, S., (2001) An Error Analysis of college students' writing: Is that really Konglish? *Studies in Modern Grammar*, 25, pp.159–174.
- Kirk, J, and Miller, M.L., (1986) *Reliability and Validity in Qualitative Research*, Newbury Park, California: Sage.
- Kourilova, M., (1998) Communicative characteristics of reviews of scientific papers written by non-native users of English. *Endocrine Regulations*, 32, pp.107–114.
- Kronick, D.A., (1990) Peer review in 18th-century scientific journalism. *JAMA*, 263, pp.1321–2.
- Kuhn, T., (1970) *The structure of scientific revolution*, Chicago, IL: University of Chicago.
- Kwan, B. and Chan, H. (2014) “An investigation of source use in the results and the closing sections of empirical articles in Information Systems: In search of a functional-semantic citation typology for pedagogical purposes”. *Journal of English for Academic Purposes*, 14, pp. 29-42.
- Leech, G., (1992) Corpora and theories of linguistic performance. In Directions in Corpus Linguistic. In J. Svartvik, eds. *Proceedings of Nobel Symposium 82, Stockholm, 4-8 August 1991* . ACM, Berlin, New York: Mouton de Gruyter.

- Li, M., (2015) A Systemic Functional Study of the English Nominal Group as Interpersonal and Textual Grammatical Metaphor. *English Language and Literature Studies*, 5(1), pp.47–56.
- Li Y. (2006) A doctoral student of physics writing for publication: A sociopolitically-oriented case study. *English for Specific Purposes* 25, 456-478.
- Li, Y. (2014) Seeking entry to the North American market: Chinese management academics publishing internationally. *Journal of English for Academic Purposes* 13, 41-52.
- van Lier, L., (2005) Case Study. In E. Hinkel, ed. *Handbook of Research in Second Language Teaching and Learning*. Mahwah, NJ: Laurence Erlbaum.
- Lim, J.M. (2010) Commenting on research results in applied linguistics and education: A comparative genre-based investigation. *Journal of English for Academic Purposes* 9, 280-294.
- Lim, J.M. (2017) Writing descriptions of experimental procedures in language education: Implications for the teaching of English for academic purposes. *English for Specific Purposes*, 47, pp. 90-106.
- Lim, J.M. (2019) Explicit and implicit justifications of experimental procedures in language education: Pedagogical implications of studying expert writers' communicative resources. *Journal of English for Academic Purposes*, 37, pp. 34-51.
- Lim, C.H., (1992) *Academic publishing in Malaysia with particular reference to Universiti Sains Malaysia Press*, Singapore: Ss- AMIC.
- Lincoln, Y.S. and Guba, E.G., (1985) *Naturalistic Enquiry*, Newbury Park, California: Sage.
- Lindsey, D., (1988) Assessing precision in the manuscript review process - a little better than a dice roll. *Scientometrics*, 14, pp.75–82.

- Liu, C. K., Sung, C. J., and Chien, S.C., (1998) The process of generating notes when the EFL students write English. *Humanity and Society Teaching Newsletter*, 8(6), pp.132–150.
- Loi, C, Lim, J. M. and Wharton, D. (2016) Expressing an evaluative stance in English and Malay research article conclusions: International publications versus local publications. *Journal of English for Academic Purposes* 21, 1-16.
- Love, A., (1993) Lexico-semantic features of geology textbooks. *English for Specific Purposes*, 12(3), pp.197–218.
- Luke, A., (1996) *Genres of Power? Literacy Education and the Production of Capital. In Literacy in Society* Williams, G. and Hasan, R., eds., London: Longman.
- Lynch, B.K., (2003) *Language Assessment and Programme Evaluation*, Edinburgh: Edinburgh University Press.
- Madkur, A., (2013) Grammatical Analysis on the Abstract of Scientific Writing. *Pedagogy*, 1(1), pp.53–68.
- Mahsa Hariri, (2012) Taxonomy of Morpho-Syntactic Errors and Error Analysis. *Research Journal of Applied Sciences, Engineering and Technology*, 4(22), pp.4856–4860.
- Malaysian Rubber Board (1998) Journal of Rubber Research Scope. Retrieved from www.lgm.gov.my
- Marco, M.J.L., (2000) Collocational frameworks in medical research papers: a genre-based study. *English for Specific Purposes*, 19(1), pp.63–86.
- Marsh, H.W., Bond, N.W. and Jayasinghe, U.W., (2007) Peer review process: assessments by applicant-nominated referees are biased, inflated, unreliable and invalid. *Australian Psychologist*, 42, pp.33–38.
- Martin, J., (1984) Language, register and genre. In Christie, F. eds. *Children writing: Reader*. Geelong: Deakin University Press, pp. 21–29.

Martin, J., (1985) *Factual writing: Exploring and challenging social reality*, Melbourne: Deakin University.

Martin, J.R., (1992) *English text. System and structure*, Amsterdam: John Benjamins.

Martin, J.R., (1993) Genre and Literacy - Modeling Context in Educational Linguistics. *Annual Review of Applied Linguistics*, 13(1), pp.141–172.

Martin, J.R., (1995) Text and Clause: Fractal Resonance. *Text*, 15(1), pp.5–42.

Martin, J., (1997) Analysing genre: Functional parameters. In Christie, F. and Martin, J. eds. *Genre and institutions: Social processes in the workplace and school*. London: Cassell, pp. 3–39.

Martin, J., (1999) Modelling context: A crooked path of progress in contextual linguistics. In Ghadessy, M. eds. *Text and context in functional linguistics*. Amsterdam: John Benjamins, pp. 25–61.

Martin, J.R., (2007) Construing knowledge: a functional linguistic perspective. In Christie, F. and Martin, J. R. eds. *Language knowledge and pedagogy*. London, New York: Continuum, pp. 34–64.

Martin, J., and Rose, D., (2007) *Working with discourse: Meaning beyond the clause*, 2nd ed., London: Continuum.

Martin, J., and Rose, D., (2009) *Genre relations: Mapping culture*, London: Equinox.

Martin, J., and Rothery, J., (1980) *Writing project report 1*, Sydney: Department of Linguistics, University of Sydney.

Martin, J.R. and White, P., (2005) *The Language of Evaluation: Appraisal in English*, London: Palgrave Macmillan.

Martin, P, Rey-Rocha, J, Burgess, S & Moreno, A. (2014) Publishing research in English-language journals: Attitudes, strategies and difficulties of multilingual scholars of medicine. *Journal of English for Academic Purposes* 16, 57-67.

Master, P., (1988) Acquiring the English article system: A cross-linguistic interlanguage analysis. In *22nd Annual TESOL Convention*. Chicago, IL.

Matsuda, P. K., & Tardy, C. (2007) Voice in academic writing: The rhetorical construction of author identity in blind manuscript review. *English for Specific Purposes* 12, 235–249.

Matthiessen, C., (1995) *Lexicogrammatical cartography: English systems*, Tokyo: International Language Sciences Publishers.

Matthiessen, C.M.I.M., (2007) The “architecture” of language according to systemic functional theory: developments since the 1970s. In Hasan, R., Matthiessen, C. and Webster, J. eds. *Continuing Discourse on Language. A functional perspective*. London, Oakville: Equinox, pp. 505–561.

Mauranen, A., (1993a) Contrastive ESP rhetoric: Metatex in Finnish-English economics texts. *English for Specific Purposes*, 12, pp.3–22.

Mauranen, A., (1993b) *Cultural differences in academic discourse – problems of a linguistic and cultural minority*. Löfman, L., Kurki-Suonio, L., Pellinen, S. and Lehtonen, J. eds., Helsinki: AFinLA.

Mauranen, A., (1993c) *Cultural differences in academic rhetoric*, Berlin: Peter Lang.

Maxwell, J.A., (1992) Understanding the Validity in Qualitative Research. *Havard Educational Review*, 62(3), pp.279–300.

McEnery, T. and Wilson, A., (2001) *Corpus Linguistics: An Introduction*. *Edinburgh Textbooks in Empirical Linguistics*. 2nd ed., Edinburgh: Edinburgh University Press.

Meadows, A.J., (1974) *Communication in Science*, London, UK: Butterworths.

Melender, B., Swales, J., and Fredrickson, K., (1998) Journal abstracts from three academic fields in the United States and Sweden: National or disciplinary proclivities? In A. Duszak, eds. *Intellectual styles and cross-cultural communication*. Amsterdam: Mouton de Gruyter, pp. 251–272.

- Miles, M.B. and Huberman, A.M., (1994) *Qualitative Data Analysis* 2nd ed., Thousand Oaks, California: Sage.
- Miller, C., (1994) Genre as social action. In Freedman, A. and Medway, P., eds. *Genre and the new rhetoric*, London: Taylor & Francis, pp. 23– 42.
- Ministry of Higher Education (MoHE), (2011) *Amanat Tahun 2010 Pengajian tinggi ke arah transformasi negara*, Putrajaya, Malaysia.
- Mirahayuni, N.K., (2010) Investigating generic structure of English research articles: Writing strategy differences between English and Indonesian writers. *TEFLIN Journal: A publication on the teaching and learning of English*, 13(1).
- Mitchell, T.F., (1957) The Language of Buying and Selling in Cyrenaica: a Situational Statement. *Hesperis*, 26, pp.31–71.
- Mitchell, R. and Myles, M., (2004) *Second language learning theories*, Hodder Arnold: New York.
- Moessner, L., (2009) How representative are the “Philosophical Transactions of the Royal Society” of the 17th-century scientific writing? In Renouf, A. and Kehoe, A. eds. *Corpus Linguistics: Refinements and Reassessments*. Amsterdam, New York: Rodopi, pp. 221–238.
- Montgomery, S.L., (1996) *The Scientific Voice*, New York, London: The Guilford Press.
- Morse, J.M. and Richards, L., (2002) *Readme First for a User's Guide to Qualitative Research*, Thousand Oaks, California: Sage.
- Mungra, P. & Webber, P. (2010) Peer review process in medical research publications: Language and content comments. *English for Specific Purposes*, 43-53.
- Neuuner, J.L., (1987) Cohesive ties and chains in good and poor freshman essays. *Research in the Teaching of English*, 17, pp.215–229.

Nwogu, K.N., (1991) Structure of science popularizations: A genre-analysis approach to the schema of popularized medical texts. *English for Specific Purposes*, 10(2), pp.111–123.

Nwogu, K.N., (1993) Thematic Progression and Paragraph Development in the experimental Research Paper: implications for academic writing. *Review of Applied Linguistics*, pp.89–104.

Nwogu, K.N., (1997) The medical research paper: Structure and functions. *English for Specific Purposes*, 16(2), pp.119–138.

Olasehinde, M.O., (2002) Error analysis and remedial pedagogy. In Babatunde, S. T. and Adeyanju, D. S., eds. *Language, meaning and society*. Ilorin, Nigeria: Itaytee Press and Publishing Co.

Oommen, A., (2012) Teaching English as a Global Language in Smart Classrooms with PowerPoint Presentation. *English Language Teaching*, 5(12), p.54. Available at: <http://dx.doi.org/10.5539/elt.v5n12p54>.

Ozturk, I., (2007) The textual organisation of research article introductions in applied linguistics: Variability within a single discipline. *English for Specific Purposes*, 26(1), pp.25–38.

Peters, J., (1995) “Electronic peer review.” In *keynote paper of the Electronic Peer Review Internet Conference*. Available at: www.mcb.co.uk.

Peters, J., (1996) The hundred years war started today: An exploration of electronic peer review. *Management Decision*, 34(1), pp.54–59. Available at: <http://search.proquest.com/docview/212090766?accountid=135175>.

Philippa Mungra, (2009) Conceptual Metaphors in Academic Medical Research Articles. *The Asian ESP Journal*, 5(2).

Preston, D., (1986) The fifty some-odd categories of language variation. *International Journal of the Sociology of Languages*, 57, pp.9–47.

- Prior, P., (1998) *Writing disciplinarity: A sociohistoric account of literate activity in the academy*. Mahwah, NJ: Laurence Erlbaum.
- Punch, K.F., (2005) *Introduction to Social Research*, Thousand Oaks, California: Sage.
- Ravetz, J.R., (1973) *Scientific Knowledge and Its Social Problems*, Harmondsworth, UK: Penguin Books.
- Richards J. C. et al., (2005) *Longman Dictionary of Language Teaching and applied Linguistics*, Beijing: Foreign Language Teaching and Research Press.
- Richards, J.C., (1971) A non-contrastive approach to Error Analysis. *English Language Teaching Journal*, 25, pp.204–219.
- Richards, J.C., (1974) *Error Analysis: Perspectives on second language acquisition*, London: Longman.
- Richards, L., (2005) *Handling Qualitative Data: A Practical Guide*, London: Sage.
- Sadighi, F., (2012) Cohesion Analysis of L2 Writing : The Case of Iranian Undergraduate EFL Learners. *Mediterranean Journal of Social Sciences*, 3(2), pp.557–574.
- Salager-Meyer, F., (1994) Hedges and textual communicative function in medical English written discourse. *English for Specific Purposes*, 13, pp.149–170.
- Salager-Meyer, F., (1999) Referential behaviour in scientific writing: a diachronic study (1810-1995). *English for Specific Purposes*, 18(3), pp.279–305.
- Samraj, B., (2002) Introductions in research articles: Variation across disciplines. *English for Specific Purposes*, 21, pp.1–17.
- Sànez, F.S., (2000) Halliday's grammatical metaphor: conceptualization and linguistic construal. *Epos*, xvi, pp.497–511.
- Sattayatham, A., and Honsa, S., (2007) Medical students' most frequent errors at Mahidol University, Thailand. *Asian EFL Journal*, 9(2), pp.170–194.

Saville-Troike, M., (1982) *The ethnography of communication*, Oxford: Basil Blackwell.

Sercombe, P.G., (2000) Learner language and the consideration of idiosyncracies by students of English as a second or foreign language in the context of Brunei Darulsalam. In Strategising teaching and learning in the 21st century. In Noor, A. M. et al., eds. *Proceedings of the International Conference on Teaching and Learning*. Bangi: Faculty of Education, Universiti Kebangsaan Malaysia.

Seyed Ali Miremadi and Ferdos Jamali, (2003) Interpersonal Grammatical Metaphor in the Written Discourse of the Social and Natural Sciences. *IJAL*, 6(2), pp.69–86.

Shaughnessy, M.P., (1977) *Errors and Expectations: A Guide for the Teacher of Basic Writing*, New York: Oxford UP.

Shugan, S., (2007) The Editor's Secrets. *Marketing Science*, 26, pp.589–595.

Silverman, D., (2005) *Doing Qualitative Research*, 2nd ed., London: Sage.

Silvia, P.J., (2007) *How to Write a Lot: A Practical Guide to Productive Academic Writing*, Washington, DC: American Psychological Association.

Sinclair, J., (2003) Corpora for lexicography. In van Sterkenburg, P., eds. *A practical guide to lexicography*. Amsterdam: Benjamins, pp. 167–178.

Sinclair, J., (1991) *Corpus, Concordance, Collocation.*, Oxford: Oxford University Press.

Sinclair, J., (1992) Trust the text. In Davies, M. and Ravelli, L. eds. *Advances in Systemic Linguistics Recent Theory and Practice*. London: Pinter Publishers.

Skelton, J., (1994) Analysis of the structure of original research papers: An aid to writing original papers for publications. *British Journal of General Practice*.

Stark, L., (2001) *Analyzing the interlanguage of ASL natives*, Newark: University of Delaware.

- Stenson, N., (1974) Induced Errors. In Schumann, J. H. and Stenson, N. eds. *New Frontiers in Second Lanuage Learning*. Massachusetts: Newbury House Publishers.
- Stossel, T.P., (1985) Refinement in biomedical communication - a case study. *Science Technology & Human Values*, 10, pp.39–43.
- Strauss, A.L. and Corbin, J., (1998) *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* 2nd ed., Thousand Oaks, California: Sage.
- Su inskiens, S., (2004) Grammatical metaphor in scientific discourse. *KALBOTYRA*, 54(3).
- Suryani, I., Aizan, Y., Noor, H., Salleh, A.R. and Desa, H., (2013) Research publication output by academicians in public and private universities in Malaysia. *International Journal of Higher Education*, 2(1), pp.84–90. Available at: <http://dx.doi.org/10.5430/ijhe.v2n1p84>.
- Suryani, I. et al., (2014) Rhetorical Structures in Academic Research Writing by Non-Native Writers. *International Journal of Higher Education*, 3(1), pp.29–38. Available at: <http://www.sciedu.ca/journal/index.php/ijhe/article/view/3593>.
- Swales, J.M., (1981) *Aspects of article introductions*, Birmingham: University of Aston.
- Swales, J.M., (1990) *Genre Analysis. English in academic and research settings*, Cambridge: Cambridge University Press.
- Swales, J.M., (1996) Occluded Genres in the Academy. In Ventola, E. and Mauranen, A. eds. *Academic Writing: Intercultural and Textual Issues*. Amsterdam: John Benjamins, pp. 45–58.
- Swales, J.M., (1998) *Other floors other voices: A textography of a small university building*. Mahwah, NJ: Laurence Erlbaum.
- Swales, J.M., (2004) *Research genres: Explorations and applications*, New York, NY: Cambridge University Press.

- Swales, J. M. and Feak, C.B., (2009) *Abstracts and the Writing of Abstracts (The Michigan Series in English for Academic & Professional Purposes)*, Ann Arbor: The University of Michigan Press.
- Teich, E., (2003) *Cross-Linguistic Variation in System und Text. A Methodology for the Investigation of Translations and Comparable Texts*, Berlin: Mouton de Gruyter.
- Teubert, W., (2010a) My brave old world. *International Journal of Corpus Linguistics*, 15(3), pp.395–399.
- Teubert, W., (2010b) Our brave new world? *International Journal of Corpus Linguistics*, 15(3), pp.354–358.
- Thomson, S. B. (2011) Qualitative Research: Validity. *JOAGG*, 6(1), pp. 77-82.
- Thompson, S., (1994) Frameworks and contexts: A genre-based approach to analyzing lecture introductions. *English for Specific Purposes*, 13(2), pp.171–186.
- Uzuner, S. (2008) Multilingual scholars' participation in core/global academic communities: A literature review. *Journal of English for Academic Purposes* 7, 250-263.
- Vasconcelos, S. M. R., Sorenson, M. M., and Leta, J., (2007) Scientist-friendly policies for non-native English-speaking authors: timely and welcome. *Brazilian Journal of Medical and Biological Research*, 40(6), pp.743–747. Available at: <http://dx.doi.org/10.1590/S0100-879X2007000600001>.
- Wang Xue-feng, (2010) Grammatical metaphor and its difficulties in application. *US-China Foreign Language*, 8(12), pp.29–37.
- Weireesh, S., (1991) How to analyze interlanguage. *Journal of Psychology & Education*, 9, pp.113–22.
- Weller, A.C., (2002) *Editorial peer review: its strengths and weaknesses*, Medford, NJ, USA: Information Today, Inc.

Yunick, S., (1997) Genres, registers and sociolinguistics. *World Englishes*, 16, pp.321–336.

Zainab, A.N., (1997) The coverage of Malaysian scholarly journals by international indexing and abstracting services; an assessment of their visibility and common characteristics. *Malaysian Journal of Library & Information Science*, 2(1), pp.13–20.

Zakaria, J. and Rowland, F., (2006) What are the Prospects for Publishing Online Scholarly Journals in Malaysia? The Cultural Constraint. *ELPUB*, pp.229–236.

Zhang, M., (2000) Cohesive features in the expository writing of undergraduates in two Chinese universities. *RELC Journal*, 31(1), pp.61–95.

Zhang, S., (2007) Analysis and classifications of common errors in spoken and written English caused by Chinese university students' lack of English grammatical knowledge. *US-China Foreign Language*, 5(5), pp.1–5.

APPENDIX

Questionnaire Introduction

A Survey on Scientific Writing and Research Article Publication

Project Title: Rhetorical Analysis of Scientists' Discourse towards Success in Peer Reviewed Publication of Research Articles.

Researcher: Veronica Charlotte khyx4vco@nottingham.edu.my

Supervisor : Dr. Derek Irwin Derek.Irwin@nottingham.edu.my

This is an invitation to take part in a research study about the limitations and shortcomings faced by scientists in discourses throughout the peer review process that halter successful publication of a scientific research article in a peer reviewed journal. This information is designed to tell you what it will involve.

This research is undertaken with the objective to characterize risks and rewards in the pathway towards research article publication aiming to identify:

- (i) the problems encountered by Malaysian researchers preceding original manuscript submission ie. scientific writing in composition of a research article
- (ii) subsequent issues resulting from the peer review process involving communication with editors and reviewers.

Questionnaires will be circulated among various research based organizations and universities throughout Malaysia for a specific period of time (October – November 2016).

Coercion will be avoided in this process and all participants would be anonymized to ensure that non-participation is not identifiable and will have no impact on any particular individual.

All data collected for purposes of this research will be accessible only to the researcher and the examiners for purposes of evaluation. Anonymity of participants and their identities, together with participant location and demographic data will be concealed throughout the research and in all outcomes resulting from the research. Data obtained will be stored online and can only be accessed by the researcher at any particular stage during the research.

The results of this research are key to addressing the underlying problems in scientific writing, in view of publishing research findings among novice researchers and inexperienced writers. The lack of awareness within this category of scientists, towards specific features of the research article and its publication process are very often overlooked by the average scientific disciplinary communities. Findings from this study will benefit scientific writing in Malaysia by putting into perspective the influence of English and its significance towards composition of a research article. Considering the susceptibility and potential of novice scientists and inexperienced writers locally, outcomes of this research will provide concrete suggestions that will contribute towards achieving publication in peer reviewed journals.

Results of this research will be eventually reported and published as part of the researcher's doctoral dissertation published by the University of Nottingham. Upon request(s) from participants, results will be conveyed accordingly.

If you have any questions or concerns, please don't hesitate to ask. We can be contacted before and after your participation at the above address, via email.

A Survey on Scientific Writing and Research Article Publication

* Required

PARTICIPANT CONSENT

Kindly complete the consent form below for research ethics purposes.

Have you read and understood the Participant Information? *

- ☐ Yes
- ☐ No

I agree to answer a questionnaire with regards to scientific writing and publication of a research article. *

- ☐ Yes
- ☐ No

A Survey on Scientific Writing and Research Article Publication

* Required

QUESTIONNAIRE

Please respond from your perspective as an author and researcher.

1 Rate the overall proportionality of sections, in terms of contribution percentage (%) in the overall research article. *

Section	5%	10%	15%	20%	25%	30%	35%	>40%
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Abstract

Introduction

Methodology

Results

Discussion

Conclusion

References

Abstract

Introduction

Methodology

Results

Discussion

Conclusion

References

2. “Results” and “data” are not one and the same. *

Strongly Agree

o 1

☐ 2

☐ 3

☐ 4

☐ 5

Strongly Disagree

3. Rate your experience in co-authoring and collaborative writing with peers. *

Excellent

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Poor

4. Rate your familiarity with stages of submission, reviewer reports/editorial decision, response to reviewers, revised manuscript, acceptance and proofs/consent to publish with regards to publication of a research article. *

Excellent

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Poor

5. Rate your proficiency and competency of scientific English. *

Excellent

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Poor

6. Rate your creativity in learning and element of reflection in scientific writing. *

Excellent

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Poor

7. Writing is a process not a product. *

Strongly Agree

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Strongly Disagree

8. Writing is a dialogue not a monologue. *

Strongly Agree

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Strongly Disagree

9. Expertise in writing is a continuum rather than an end state. *

Strongly Agree

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Strongly Disagree

10. Rate your strength with regards to expressing perspectives in scientific writing. *

Excellent

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Poor

11. Rate new technology on writing and electronic text advancements (i.e. reading and writing on screen as opposed to on paper).

Excellent

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Poor

12. What is your awareness on nominalisation in scientific writing? *

Excellent

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Poor

13. What is your awareness on the application of hedges, boosters, intensifiers and evaluative adjectives for strengthening claims in scientific writing? *

Excellent

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Poor

14. Rate your perspective on scientific writing containing fairly short sentences with less complicated grammar. *

Strongly Agree

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

Strongly Disagree

15. Do you point explicitly to gaps or weakness in previous research by means of as many citations and predominantly reliant on recent citations in your writing? *

Strongly Agree

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

Strongly Disagree

16. Rate accurate usage of sentence connectors (however etc.) in your writing. *

Excellent

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

Poor

17. Rate your competency in expressing doubt and certainty in scientific writing. *

Excellent

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

Poor

18. In responding to reviewers, authors should acknowledge feedback received together with a clear listing of justifications/amendments incorporated. *

Strongly Agree

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

Strongly Disagree

19. The Methodology section should reflect reproducibility to the reader. *

Strongly Agree

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

Strongly Disagree

20. Rate your awareness on accurate use of the English articles (a, an or the) appearing before nouns in scientific writing. *

Excellent

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Poor

21. Rate your familiarity with Latin expressions to be incorporated appropriately in scientific writing (e.g.; et al.; errata; ibid.; i.e.; N.B; viz. ad hoc; in situ; etc.). *

Excellent

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Poor

22. What aspects of scientific writing and research article publication do you find most challenging? *

Your answer

23. What aspects of reviewer/editor feedback do you find most useful? *

Your answer

24. Rate the proportionality of scientific writing in your work routine. *

- ☐ <5%
- ☐ 10%
- ☐ 20%
- ☐ 30%
- ☐ >40%

25. What is your age? *

- ☐ <25
- ☐ 25 - 30
- ☐ 30 - 40
- ☐ 40 - 50
- ☐ 50 - 60
- ☐ >60

26. How many publications have you as main author, got accepted in peer reviewed journals.

*

- ☐ >10
- ☐ 5 - 10
- ☐ <5
- ☐ None

27. How many publications have you as co-author, got accepted in peer reviewed journals. *

- ☐ >10
- ☐ 5 - 10
- ☐ <5
- ☐ None

28. Specify your professional affiliations with academic institutions (university/college), research bodies, etc.

Your answer

29. How many postgraduate students are/have been under your supervision? *

- ☐ >20
- ☐ 10 - 20
- ☐ 5 - 10
- ☐ <5
- ☐ None

30. Specify the number of manuscripts you have reviewed for a peer reviewed journal/(s) within the numerical categories below.*

- ☐ >20
- ☐ 10 - 20
- ☐ 5 - 10
- ☐ <5
- ☐ None