An Essay in Interdisciplinary Work – Papers and Theses
Published: September, 2011

Victor Grech
victor.e.grech@gov.mt

Abstract

Interdisciplinarians may experience acute difficulties when attempting to read or write works in different disciplines. Here I detail the differences one encounters in perceptions and values when approaching written works in other branches of academia.

INTRODUCTION

Interdisciplinary research is trendy, but pitfalls abound for the unwary in the face of unspoken norms and varying conventions of unfamiliar camps. In a previous paper, I reviewed the practical differences between presentations at conferences for the two camps of the sciences and the humanities.[1] In this paper, I will review the divergences in the way that papers and theses are handled.

Papers

In the current 'publish or perish' milieu, the generation of original papers is vital.[2] While humanities papers tend to have the same formats, the sciences have a much wider spread of categories. For example, in medicine, the briefest possible publication is a letter to the editor, usually with regard to a previous publication (up to 500 words). The next largest publication is a short report or a case report (up to 1200 words), 'a foundational text that enables clinicians to depict, reason, and instruct others about a sick person's medical situation',[3] akin to a short story. This is followed by the scientific holy grail, an original research study (up to 2500 words). These typical figures are derived from the *Archives of Disease in Childhood* journal. Humanities papers are much longer, and in *Medical Humanities*, for example, the word count has recently been raised to 5000 words. In other journals, acceptable word counts of up to 10,000 are not uncommon.

Abbreviations encourage brevity. They are commonly used in the sciences where they are defined in parentheses on first usage; abbreviations are discouraged in the humanities.

It is important to note that each discipline's conventions for the presentation of new knowledge is inexplicit and must be assimilated by tacit means.[4] These norms constitute the refined product of a combination of social, cognitive and epistemological influences.[2,5] Writers in different disciplines must identify and master these inexplicit norms in order to successfully meet their audience's expectations, and have papers accepted for publication,[6] thus acquiring linguistic game rules that neither students nor supervisors seem able to articulate.[6]

Jargon is common in the sciences, not only demonstrating the writer's familiarity with the lexicon of the discipline, but also due to the technical and highly specialised nature of the discourse. Unfortunately, jargon may be too dense and make a paper unintelligible, even to scientists in neighbouring disciplines. Hence unnecessary and pretentious jargon is discouraged. Clarity is given a higher priority than eloquence. In the humanities, written prose may use uncommon words and refer to philosophical terms that may make texts equally impenetrable. Paragraphs and sentences are much longer and more elegant and expressive. Lengthy and complex concepts are arrayed, often utilising parallel structures along with the lavish use of imagery and metaphor.[6] Indeed, 'the very language through which our enculturation is achieved is itself intelligible only to men who share enough of our own modes of life'.[7]

Humanities papers frequently refer to texts by utilising direct quotations (as above). This may lead to blocks of text of several tens of words being reproduced, with complicated citations referring to individual page numbers. Quotations are virtually unheard of in scientific papers as such practices are considered almost plagiaristic. Moreover, in the interest of brevity, authors are expected to paraphrase important messages.

In scientific papers, the passive voice is used as this underscores objectivity, whereas the humanities utilise the active voice, emphasising subjective and persuasive rhetoric.[6]

Science papers almost exclusively utilise the present and past tenses as individual researchers contribute serially to the accretion of knowledge. The humanities engage narratives in the eternal present, and hence mostly tend to use this tense, naturally with the exception of the discipline of history.

Paper titles in the humanities are often sentence fragments while science papers titles may be fragments or full sentences. In both camps, a full-sentence title highlights one central point or result. Titles framed as questions are commoner in the sciences as these succinctly identify the research question.

Most science journals and many humanities journals require an abstract, but in the sciences, the journal may specifically require a structured abstract with paper headings as below. Scientific abstracts are extremely terse, do not contain any extraneous text, such as 'in this paper…' and are always presented at the beginning of a paper. In the humanities, an abstract may be printed at the end of a paper.

It is not uncommon for non-English-language journals of both camps to also reproduce abstracts written in English, the evolving *lingua franca* of academia.

For the sake of brevity, in a science paper, any internal deictics are mostly limited to references such as 'above' and 'below'. The humanities are more profuse in such wordings and frequently reiterate objectives.

Headings are discouraged in humanities journals but are actively encouraged in scientific papers as they emphasise the systematic nature of science and relieve authors from creating smooth textual transitions that would increase a paper's length. Headings are formulaic and usually consist of an abstract, introduction, methods, results and discussion.

In scientific papers, tables and figures in results sections abound as this allows data to be summarised and scrutinised, and the discussion then concentrates solely on the relevant parts of the new data. Authors always have strict injunctions not to reiterate data that is evident in tables and graphs. Tables and graphs are rare in the humanities.

Notes are often used, sometimes copiously, at the end of a humanities paper but this is almost unheard of in a sciences paper where a rapid and terse exposition of the essential facts only is expected.

Referencing within papers is very different in the two camps. The sciences generally use the citation-sequence, a numbered style which creates a numerical list of references at the end of the manuscript in the list of works cited, based on the order in which the works appear in the text. Within the text, the reference number is inserted at the appropriate point, usually after the punctuation, within parentheses or as a superscript, repeating a previous number if the same source has already been cited. Such systems enhance brevity by reducing clutter and allow readers to locate references with ease. This style includes the Vancouver format which has been adopted almost universally by biomedical and science journals, and which has evolved into the Uniform Requirements for Manuscripts (URM).

The humanities often use the footnote style for citations (e.g. Modern Humanities Research Association, MHRA). Footnotes may also be used to impart information that is not quite germane to the text, and it is not

uncommon for a quarter of a paper to be composed of footnotes. Yet another style that is commonly adopted by the humanities is the author-date style such as the Harvard or Modern Language Association of America (MLA) styles where the references are placed in the text, not in the footnotes, informing readers when the works were published. In both footnote and author-date styles, a bibliography is generated at the end of the manuscript with the authors listed alphabetically.

Due to the didactic quality of science writing, such papers usually cite other papers whereas humanities papers are likelier to cite scholarly books. All styles are aided by bibliographic software that archives citations of all types in a database that then outputs bibliographies with computer accuracy.

In the sciences, since funding may be industry supplied and may potentially bias results, many journals' editors demand transparency by requiring that papers accepted for publication list the precise role of each author in the creation of a paper and their source of funding.

Theses
Like papers, theses are extremely discipline-specific.[6] Theses in the humanities are typically 80,000–100,000 words long, while science theses are approximately half this length.

The differences described above relating to papers almost all apply to theses, at all levels. Scientific theses are formulaic in their structures, and like individual papers, they also build dispassionate arguments from the bottom-up, and are often compartmentalised, as different sections may be prepared (or actually have already been published) as individual papers.[5][6] Hence, writers use the process of a literature review, identifying a novel research question, and explain how the research is to be done, a set of moves that fit within an accepted framework.[8] Furthermore, paragraphs are linked within sections by the 'theme and new' method in which the initial sentence of a paragraph is an introduction to a topic, while the remainder of the paragraph then contains new information about the topic.[9]

Humanities theses are highly personal and individualistic, working from the top-down and idiosyncratically constructing arguments and citing references as deemed fit.[10] Causal connections revolve around complex forms of reasoning, relying heavily on the audience's judgment to accept a new insight, with non-incremental arguments.[10] A long introduction is common when compared to a science work, where the introduction is usually as brief a preamble as the author can reasonably get away with.

Interestingly, in the sciences, confrontation with conflicting authors is often dealt with by the simple expedient of ignoring such publications, such that praising and blaming is achieved by inclusion or exclusion rather than making overt judgments, as often practised by the humanities.

In both camps, the abovementioned author-date system is commonly used and a bibliography is generated at the end of the manuscript with the authors listed alphabetically.

DISCUSSION
This paper is a continuation of an earlier paper that explored the dissimilarities in methods of presentations at conferences between the humanities and the sciences and analyses the variations in writing norms between these two camps.

Interestingly, when scientists write within the humanities, they unwittingly bring a scientific viewpoint, since it is difficult to restrain the urge to analyse and taxonomise. Only one example will be given, that of this very author, who has published a paper that analyses the way in which interdisciplinary scientists have been portrayed in science-fiction narratives[11] and a dissertation that classifies the various aspects of infertility in all of science-fiction.[12]

In conclusion, it is sincerely hoped that this paper and its predecessor will forewarn nascent interdisciplinarians of the real and practical difficulties that they will inevitably encounter in their transdisciplinary crosstalk.

REFERENCES

1. Grech V. An Essay in Interdisciplinary Work – Overview and Differences in presentations at Conferences. Yale Journal of Medical Humanities. Yale Journal of Medical Humanities 2011;September.
2. Becher T. Disciplinary Discourse. Studies in Higher Education 1987;**12**:261-274.
3. Hurwitz B. Form and Representation in Clinical Case Reports. Lit Med 2006;**25**:216-40.
4. Gerholm T. On tacit knowledge in academia. European Journal of Education 1990; **25**:263-271.
5. Becher T. Academic Tribes and Territories: Intellectual Enquiry and the Cultures. of the Disciplines. Milton Keynes: Open University Press 1989.
6. Parry S. Disciplinary Discourse in Doctoral Theses. Higher Education 1988;**36**:273-299.
7. Toulmin S. Human Understanding. Oxford: Clarendon Press 1972.
8. Swales J. Aspects of Article Introductions. Birmingham: University of Aston Language Studies Unit 1981.
9. Halliday MAK. An Introduction to Functional Grammar, 2nd ed. Melbourne: Edward Arnold 1984.
10. Bazerman, Charles. What written knowledge does. Philosophy of the Social Sciences 1981;**2**:361-387.
11. Grech V. Interdisciplinarity in Science Fiction. New York Review of Science Fiction 2011;**23**:14-18.
12. Grech V. Infertility in Science Fiction. Unpublished Doctoral Thesis. University of Malta. 2011.

About the Author

Prof. Victor Grech graduated MD from the University of Malta Medical School in 1988. He specialized in paediatrics and took up paediatric cardiology at The Hospital for Sick Children at Great Ormond Street in London. While there, he commenced a Ph.D. entitled 'Congenital Heart Disease in Malta', and this was completed in 1998. His appointment with the Maltese Department of Health is as a consultant paediatrician with a special interest in paediatric cardiology. Prof. Grech has published extensively not only in paediatric cardiology but also in general paediatrics and other aspects of medicine. He is also the creator and editor-in-chief of the journal /Images in Paediatric Cardiology/ (www.impaedcard.com). His current project is a dissertation with the English Literature Department of the University of Malta entitled 'Infertility in Science Fiction'. Prof. Grech lives in Pembroke, Malta with his wife, two children and a Siamese cat, and finds painting Maltese landscapes and seascapes a particularly relaxing pastime. Some of his work can be found at www.maltaimpressions.com.

Published:
September, 2011