Disciplinary variation and beyond

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Overview of talk

1. Evidence in ESP
2. Corpora in ESP
3. Variation - disciplinary
4. Beyond discipline
Target situation analysis

- Questionnaires
- Participatory
- Authentic data collection
- Observation
- Interviews
In academic contexts

Reading
- Textbooks
- Research articles

Writing
- Assignments
- Proposals

Speaking
- Presentations
- Discussions

Listening
- Lectures
- Seminars
Ewer and Latorre (1967, 1969)

- Article in ELTJ reports on a comprehensive analysis of three million words of scientific English text in ten disciplines
- Revealed considerable variety within the sub-registers of 'scientific English'.
- Research into practice – challenged many assumptions through empirical analysis
When completed, the analysis was found to contain some surprises. For example, the great variety of writing in scientific English had not been fully realized, nor the fact that these different sub-registers tended to use distinct structures. Thus the commonly-cited ‘typical example’ of scientific writing, i.e. the description of an experiment as it appears in English school textbooks (‘Take a clean beaker and add 100 ml. of distilled water . . .’, etc.) or of a piece of apparatus, in which the structures used are very limited, was found to account for very little of the real literature of science.
Digital revolution

- Large quantities of textual evidence now available in digital form
- We can also scan texts and use OCR technology to convert into ‘text’ format
- Corpus analysis tools and techniques
- In early years restricted to the researcher ‘expert’
- Now the tools are available (eg, AntConc and other Laurence Anthony programmes) and the techniques can be learned
The role of corpora and corpus approaches in the description of patterning, moves, functions and phraseology

- Large collections of evidence of language use
- Corpus analysis tools can be used to find repeated patterns, mainly at a formal level (language forms) but also at syntactic and functional levels
- Data can be annotated for features that are below the surface
- Can identify the prototypical and the less typical
- Can be used in conjunction with other approaches
Functional analyses

- Looking at language in different sections of a text can lead to understandings of what writers are doing in different sections.
- Bringing corpus analysis together with genre analysis.
- Eg, what writers do (typically) in Conclusions sections of Research Articles – in different disciplines (do you cite? Do you repeat the research questions? Do you hedge?)
Biology is ... very different from physics. The basic laws of physics can be expressed in exact mathematical form, and they are probably the same throughout the universe. The ‘laws’ of biology, by contrast, are often only broad generalisations, since they describe rather elaborate chemical mechanisms that natural selection has evolved over billions of years.

Francis Crick (1990)
Variation

- Between disciplines
- Between genres (report, research article, thesis)
- Between modes (written, spoken)
- Between levels (undergraduate 1-4, graduate)

Corpus used as evidence of discourse practices
Variation between disciplines

Looking at linguistic evidence of:

A. The **values** that researchers espouse
B. The **references** researchers make to other texts
C. The **voice(s)** researchers project, the **identities** they construct
D. How much **guidance** they give to their readers, what sort of **audience** they assume
Values
## Groom (2005)

<table>
<thead>
<tr>
<th>Data</th>
<th>Features</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 multi-million word corpora</td>
<td>It v-link ADJ that</td>
<td>HistRev - LIKELY/OBVIOUS that assessing the validity of an interpretation LitRev focus on DESIRABILITY, highly personalised evaluation of individual scholarly acts</td>
</tr>
<tr>
<td>2 genres (research articles and book reviews)</td>
<td>It v-link ADJ to</td>
<td></td>
</tr>
<tr>
<td>2 disciplines (History and Literary Criticism)</td>
<td></td>
<td>• HistArt data - persuading the reader to reject plausible alternative interpretations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• LitArt data - persuading readers to accept interpretations which might at first glance seem rather far-fetched</td>
</tr>
</tbody>
</table>
Petric (2007)

- A corpus of 16 master’s theses written in English at an English-medium university in Central Europe, written by second language writers from 12 countries in Central and Eastern Europe
- Gender studies
- 8 high grade; 8 low grade
- Categories based on Thompson (2001) but adapted to perceived functions
Findings

- mainly attribution in both high and low
- range of rhetorically more complex citation types requiring analytical skills in the high-rated theses
- in low-rated theses knowledge display is overemphasised – knowledge telling rather than knowledge-transforming
Hu and Wang (2014)

- 84 research articles sampled from 12 leading Chinese- and English-medium journals of applied linguistics and general medicine
- UAM Corpus Tool
- Citations examined in terms of dialogic contraction (i.e., closing down the space for alternative views) or dialogic expansion (i.e., opening up the space for alternative voices)
Hu and Wang (cont)

<table>
<thead>
<tr>
<th>Applied Linguistics RAs</th>
<th>Medical RAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>propositions that convey varying degrees of subjectivity</td>
<td>Presenting factual information</td>
</tr>
<tr>
<td>argue, claim, explain, note, point out, suggest</td>
<td>report, show, find, indicate, demonstrate, describe</td>
</tr>
<tr>
<td>non-factive, mental, and/or textual verbs</td>
<td>Mostly research and/or factive verbs</td>
</tr>
<tr>
<td>The cited propositions opened up a dialogic space for alternative viewpoints</td>
<td>Allow little room for negotiation and close down the space for dialogic alternatives.</td>
</tr>
</tbody>
</table>
Voice and identity
• Two disciplines: Politics and Materials Science

• Genre: PhD thesis

• Use of retrospective label nouns (with ‘this’) to indicate the stance that the authors take
  
  • Example: “The Guidelines fall short of recognising that women as such constitute a particular social group. **This shortcoming** leads to problems …”
Non-metalinguistic eg, This procedure
Metalinguistic eg, This discussion

<table>
<thead>
<tr>
<th>Per 100,000 words</th>
<th>Politics</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-metalinguistic</td>
<td>48.4</td>
<td>45.3</td>
</tr>
<tr>
<td>Metalinguistic</td>
<td>28.4</td>
<td>14.7</td>
</tr>
</tbody>
</table>

“Politics draws upon resources that are language based: both written and spoken records ... the activity of the discipline is inherently text-based.

The activity of [materials science] is primarily directed to the performance of experiments”
• In materials science, the information is shown to contribute in a positive way to the construction of the writer’s argument:
  • “This explanation is in agreement with the experimental observations ...”
• In politics, the information encapsulated supplies the next step of the writer’s argument:
  • “This proposition could be tested through a comparative analysis ...”

‘In social sciences, knowledge is advanced by putting forward the views of others in order to take up a position in relation to them ...The growth of knowledge in the natural sciences tends to proceed cumulatively’
McGrath (2016)

- A corpus of 36 research articles (18 from history, 18 from anthropology)
- Looking into the use of first-person subject pronouns.
- ‘I’ used more frequently in the anthropology articles.
- Considerable intra-disciplinary variation was observed.
  - “the author of A13 (an article with an object of study that I suspect is of particular interest to some environmental agencies) may have avoided self-mentions in order to align with a more positivistic discourse”
- Wittgenstein’s family resemblances: a discipline will display various characteristics, but none of these characteristics are defining or necessary.
Metadiscourse

A writer’s awareness of the reader and his or her need for elaboration, clarification, guidance and interaction

self-reflective linguistic expressions referring to the evolving text, to the writer, and to the imagined readers of that text
<table>
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<tr>
<th>Interactive resources</th>
<th>Function</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitions</td>
<td>Express semantic relation between propositions</td>
<td>In addition / but</td>
</tr>
<tr>
<td>Frame markers</td>
<td>Refer to discourse acts, sequences or text stages</td>
<td>Finally / in conclusion</td>
</tr>
<tr>
<td>Endophoric markers</td>
<td>Refer to information in other parts of the text</td>
<td>See Section 3.2 above</td>
</tr>
<tr>
<td>Evidentials</td>
<td>Refer to source of information from other texts</td>
<td>Fuller (2015) argues ...</td>
</tr>
<tr>
<td>Code glosses</td>
<td>Help readers grasp meanings of ideational material</td>
<td>In other words / such as</td>
</tr>
</tbody>
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</thead>
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<tr>
<td>Hedges</td>
<td>Withhold writer’s full commitment to proposition</td>
<td>Might / possible</td>
</tr>
<tr>
<td>Boosters</td>
<td>Emphasise force of writer’s certainty in proposition</td>
<td>It is clear that</td>
</tr>
<tr>
<td>Attitude markers</td>
<td>Express writer’s attitude to proposition</td>
<td>Surprisingly</td>
</tr>
<tr>
<td>Engagement markers</td>
<td>Explicitly refer to or build relationship with reader</td>
<td>You can see that</td>
</tr>
<tr>
<td>Self-mentions</td>
<td>Explicit reference to author(s)</td>
<td>I / we / my</td>
</tr>
</tbody>
</table>
Mu et al. (2015)

- The use of metadiscourse for knowledge construction in Chinese and English research articles
- What are the similarities and differences in the use of metadiscourse between English and Chinese applied linguistics RAs?
- How do international applied linguists and Chinese applied linguists choose interactional metadiscourse resources in their RAs?
Select journals based on SSCI and CSSCI scores – 4 English and 4 Chinese

Choose 5 articles on L2 learning, published 2002-2006, empirical RA in IMRD format

Code all articles for metadiscourse in Nvivo then quantify and analyse
Findings

- In both groups, more interactive than interactional
- Mainly transitions and evidentials
- More metadiscoursal features in English than Chinese – nearly three times more
- English RAs tend to use more interactional metadiscourse than Chinese

international English RAs more strongly emphasise the role of authors and readers in the negotiation of new scientific knowledge
Boosters

**English writers**

- To stress the significance and contributions of their findings, and to boost their current knowledge and scholarship

- In fact, many have argued that, for both L1 and L2 academic writers, copying from source texts is a necessary phase through which developing writers must pass before they acquire more sophisticated ways of integrating sources into their writing.

**Chinese writers**

- To support their initial hypotheses

- In fact, this method did not help them succeed to guess the meaning of the words.
What is a discipline?

- A branch of knowledge
  - Library classification systems
  - National or international categorisation of academic activity
  - Institutional divisions
  - The ‘what’ is studied
- A social construct, created and sustained through journals, conferences, associations. Membership is a question of research identity and of belonging to greater or lesser degrees to a grouping
  - Not just what but when, where and why

Cf, M au ran en 2006
Broad disciplinary groupings

- Large corpus collections are often sub-divided into disciplinary domains, such as (MICASE, BASE and BAWE):
  - Arts and Humanities
  - Life Sciences
  - Physical Sciences
  - Social Sciences
Durrant 2015

1500 files from the BAWE corpus
Figure 4: Percentage of authors from each discipline falling within each cluster
Beyond discipline

- Bethany Gray (2015)
- Multidimensional Analysis
- Variation in her corpus is a result not only of discipline but also of research paradigm:
  - Theoretical
  - Quantitative
  - Qualitative
Constellations

- IDRD: Research into interdisciplinary research discourse
- Corpus of research articles from 11 different journals, complete holdings 2001-2010
- Is writing for an interdisciplinary audience different from writing for a monodisciplinary audience?
- 6 journals interdisciplinary, 5 monodisciplinary
Multidimensional analysis of the data

- Created six dimensions
- Texts in one journal were clustered according to their dimension profiles
- This led to six constellations
- The constellations are not disciplinary groupings but relate to research ‘paradigm’
Dimension Profiles of Each Constellation

- Quantification & Measuring
- Governance & Management
- Modelling
- Reports and historical case-studies
- Personal voices
- Review and evaluation
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Dimension 1: Focus on a system (positive) vs focus on what was done (negative)
Dimension Profiles of Each Constellation

Quantification & Measuring

Governance & Management

Modelling

Models tend to be atemporal (therefore in timeless present tense) and abstract (abstract nouns, process nouns)

Reports and historical case-studies

Personal voices

Review and evaluation

Dimension 1: Focus on a system (positive) vs focus on what was done (negative)
• Our research reinforces Gray’s point: discipline is only part of the story
• But the reality is more complex than a division into theoretical, quantitative and qualitative
• Current trend towards mixed methods, for example
• But a tripartite division is a good starting point
Conclusion

- Corpus studies have increased our knowledge about disciplinary variation:
  - Student writing
  - Research writing
- However, the notion of discipline is problematic
- Alternative parameters are emerging:
  - Quantitative, qualitative, theoretical
- Corpus resources are also of benefit to learners and teachers
- Mark Davies, Sketch Engine (BAWE, BASE); AntConc and other AntTools
- But also – Excel, UAM CorpusTool, Nvivo
References