

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

1

Questionnaires

Observation

Authentic
data
collection

Interviews

Participatory

In academic contexts



Reading

- Textbooks
- Research articles



Writing

- Assignments
- Proposals



Speaking

- Presentations
- Discussions



Listening

- Lectures
- Seminars

Ewer and Latorre (1967, 1969)

- Textbook: A Course in Basic Scientific English (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

2

Sketch
Engine

WordSmith
Tools

AntConc

Corpus tools,
interfaces

Corpus findings

Corpus
resources

Corpus users

Public
domain (eg,
COCA)

Home made
(web, scans)

Teachers

Students

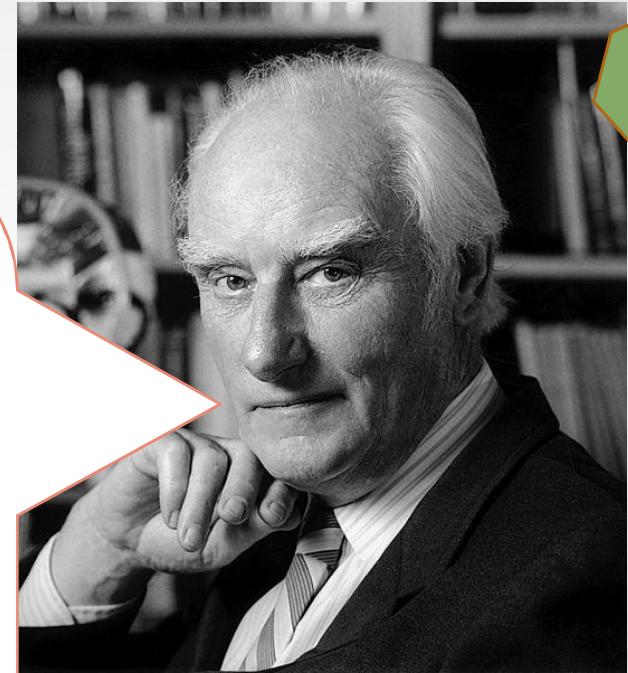
Materials
writers

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

3

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)

Data	Features	Findings
4 multi-million word corpora 2 genres (research articles and book reviews) 2 disciplines (History and Literary Criticism)	It v-link ADJ that It v-link ADJ to	HistRev - LIKELY/OBVIOUS that assessing the validity of an interpretation LitRev focus on DESIRABILITY, highly personalised evaluation of individual scholarly acts <ul style="list-style-type: none">• HistArt data - persuading the reader to reject plausible alternative interpretations• LitArt data - persuading readers to accept interpretations which might at first glance seem rather far-fetched



Citation practices

Researcher/text in
relation to other
researchers/texts

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)

Applied Linguistics RAs	Medical RAs
propositions that convey varying degrees of subjectivity	Presenting factual information
<i>argue, claim, explain, note, point out, suggest</i>	<i>report, show, find, indicate, demonstrate, describe</i>
non-factive, mental, and/or textual verbs	Mostly research and/or factive verbs
The cited propositions opened up a dialogic space for alternative viewpoints	Allow little room for negotiation and close down the space for dialogic alternatives.



Voice and identity



Charles (2003)

- 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*

Per 100,000 words	Politics	Materials
Non-metalinguistic	48.4	45.3
Metalinguistic	28.4	14.7

"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

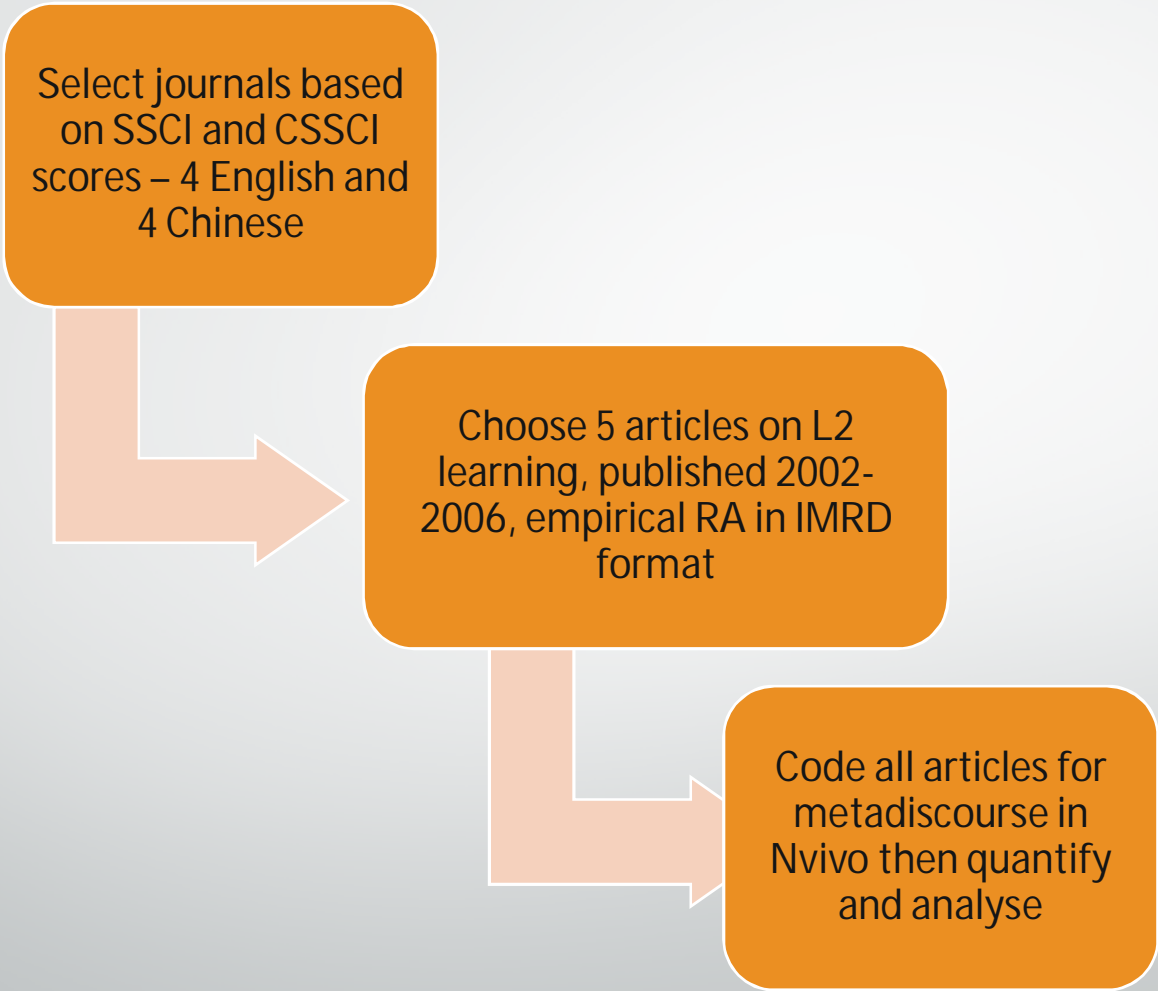
self-reflective linguistic expressions referring to the evolving text, to the writer, and to the imagined readers of that text

Interactive resources	Function	Examples
Transitions	Express semantic relation between propositions	In addition / but
Frame markers	Refer to discourse acts, sequences or text stages	Finally / in conclusion
Endophoric markers	Refer to information in other parts of the text	See Section 3.2 above
Evidentials	Refer to source of information from other texts	Fuller (2015) argues ...
Code glosses	Help readers grasp meanings of ideational material	In other words / such as

Interactional resources	Function	Examples
Hedges	Withhold writer's full commitment to proposition	Might / possible
Boosters	Emphasise force of writer's certainty in proposition	It is clear that
Attitude markers	Express writer's attitude to proposition	Surprisingly
Engagement markers	Explicitly refer to or build relationship with reader	You can see that
Self-mentions	Explicit reference to author(s)	I / we / my

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?



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graph TD; A[Select journals based on SSCI and CSSCI scores – 4 English and 4 Chinese] --> B[Choose 5 articles on L2 learning, published 2002-2006, empirical RA in IMRD format]; B --> C[Code all articles for metadiscourse in Nvivo then quantify and analyse];
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Select journals based
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Choose 5 articles on L2
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format

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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.*

Cf, Mauranen 2006

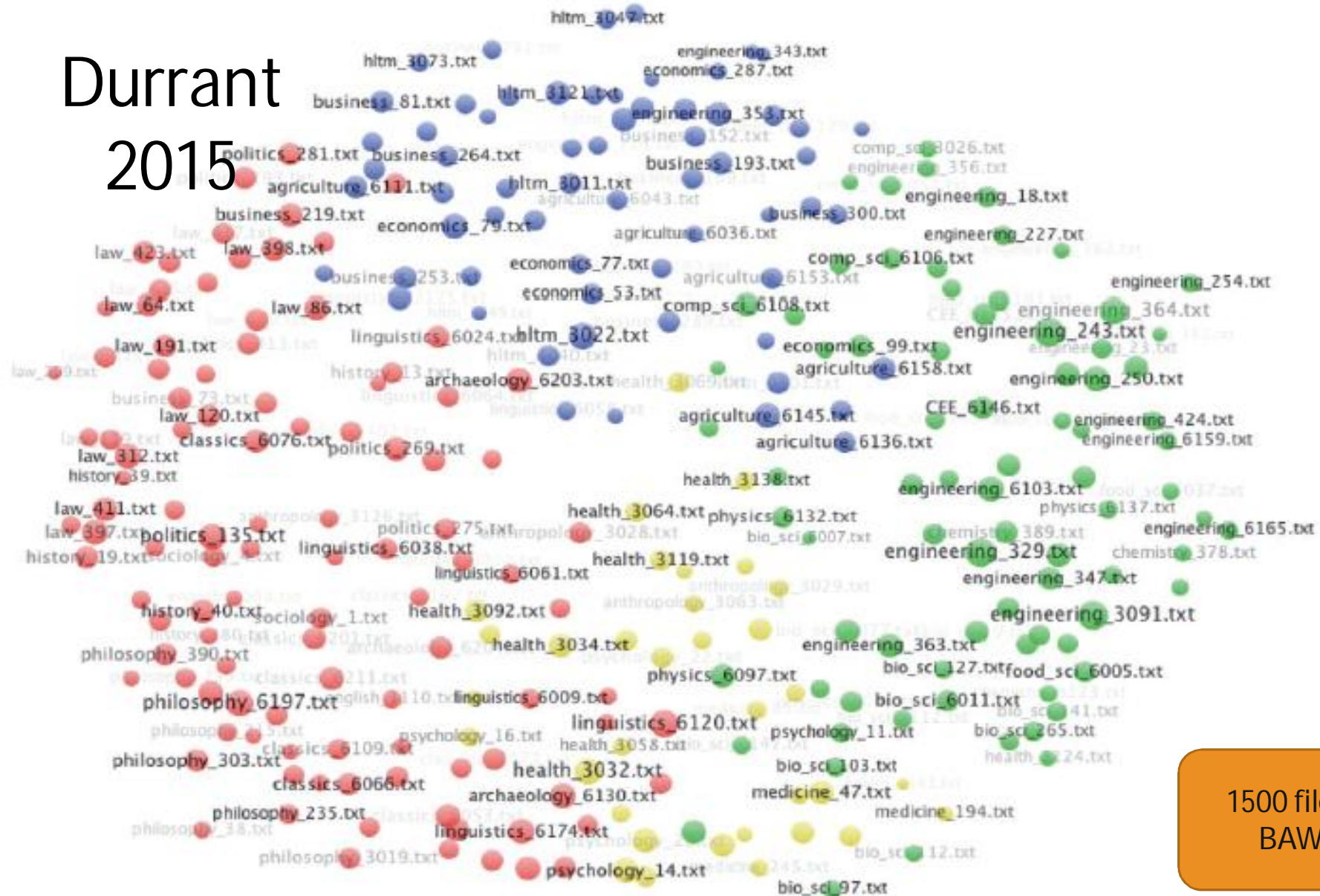
What is a discipline?

- 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*

Broad disciplinary groupings

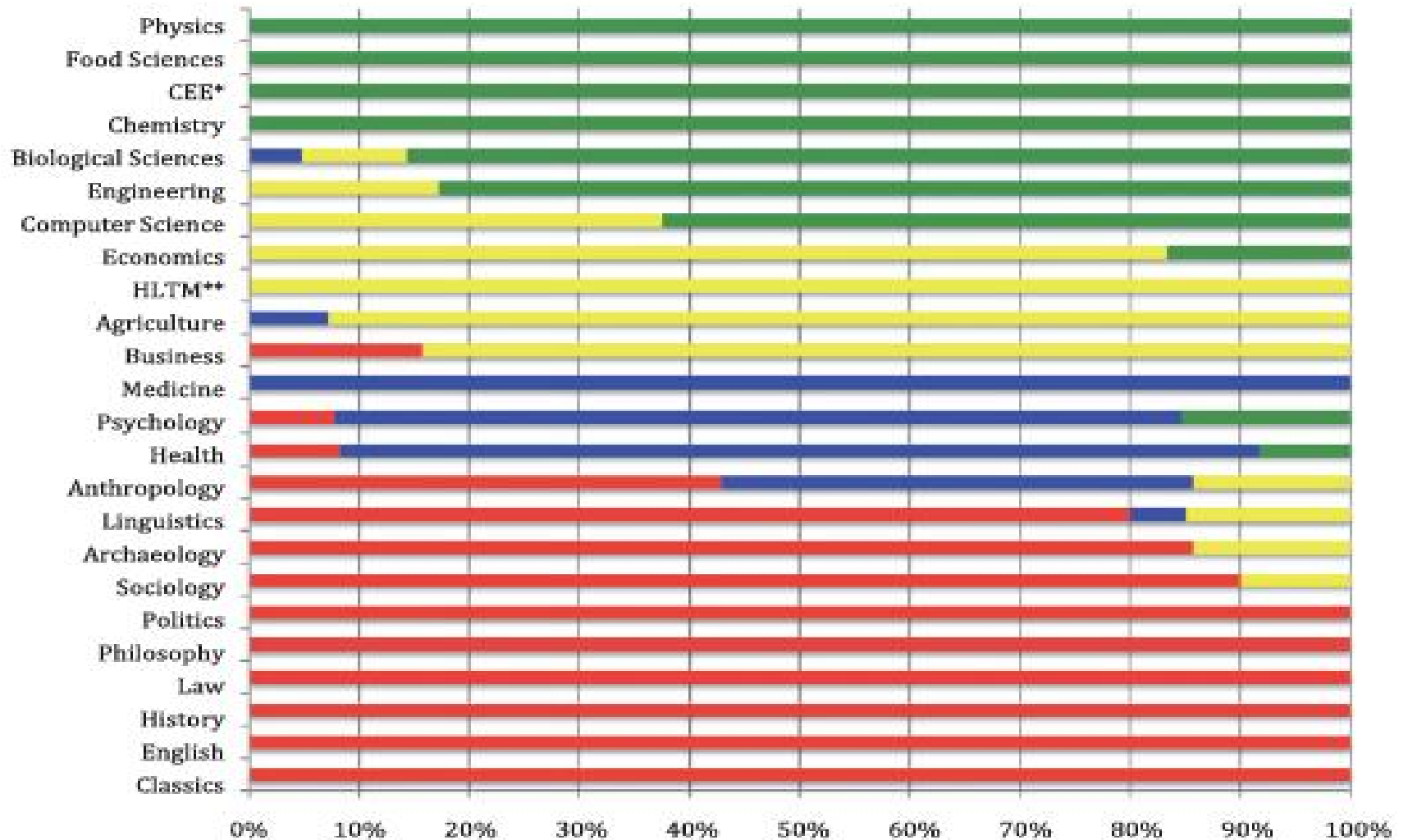
- Large corpus collections are often sub-divided into disciplinary domains, such as (MICASE, BASE and BAWE):
- Arts and Humanities
- Life Sciences
- Physical Sciences
- Social Sciences

Durrant 2015



1500 files from the
BAWE corpus

Durrant
(2015)



*Cybernetics and Electronic Engineering; **Hospitality, Leisure and Tourism Management

Figure 4: Percentage of authors from each discipline falling within each cluster

Beyond discipline

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

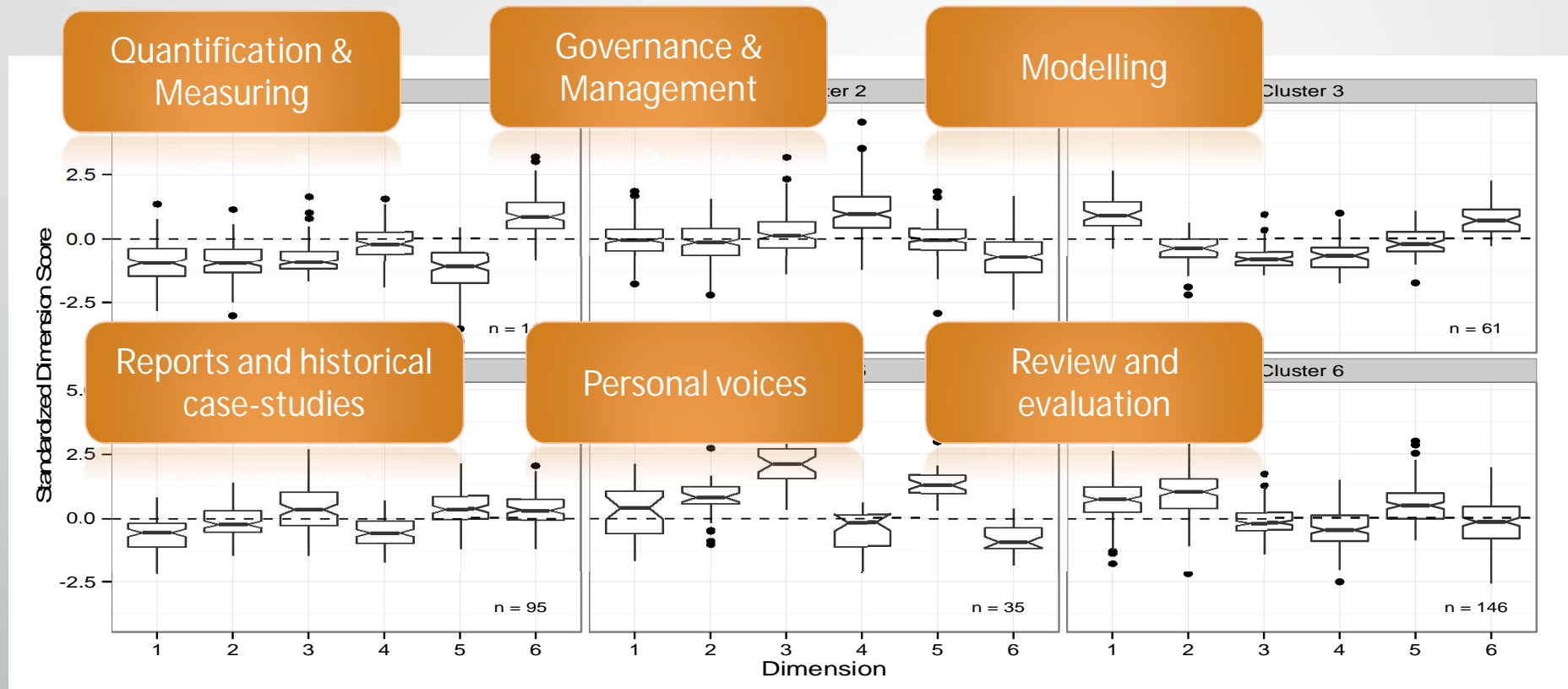
Constellations

- 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

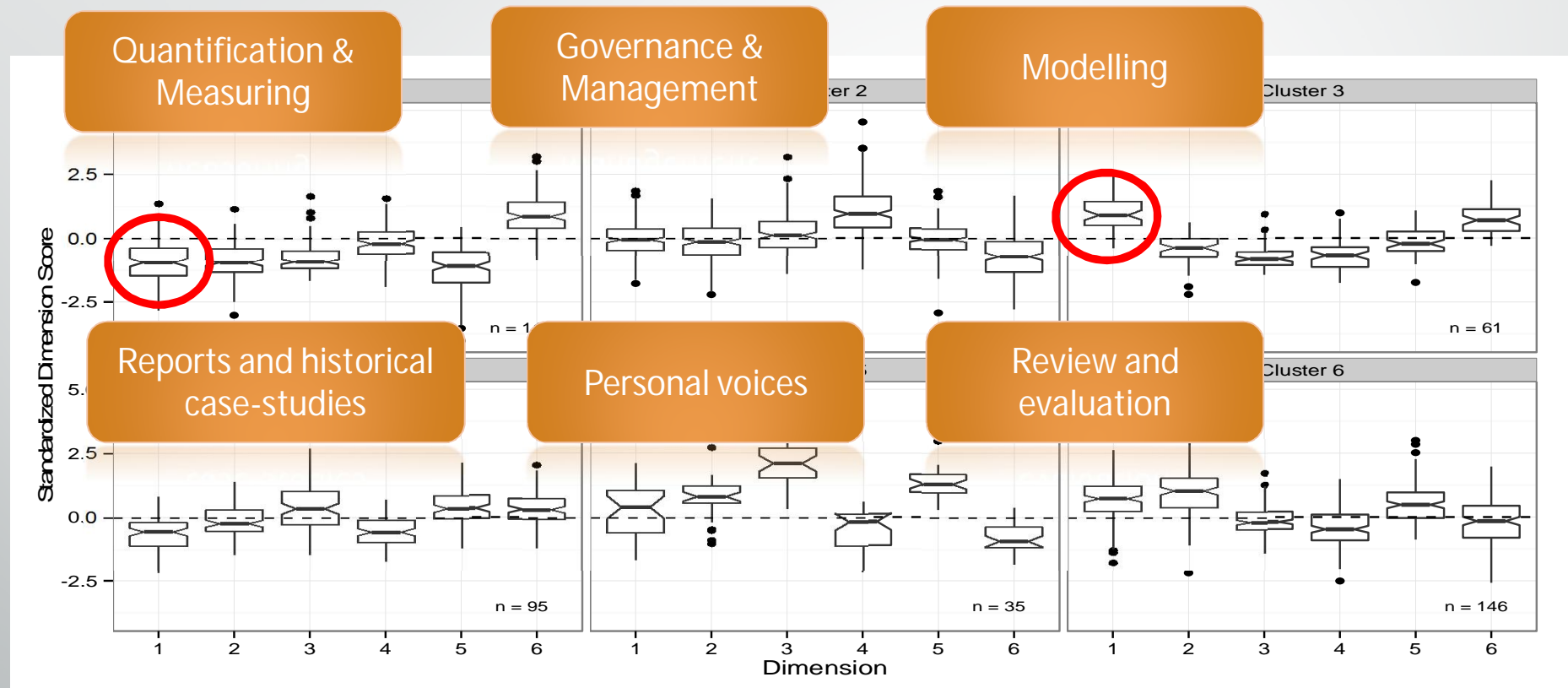
Multidimensional analysis of the data

- 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'

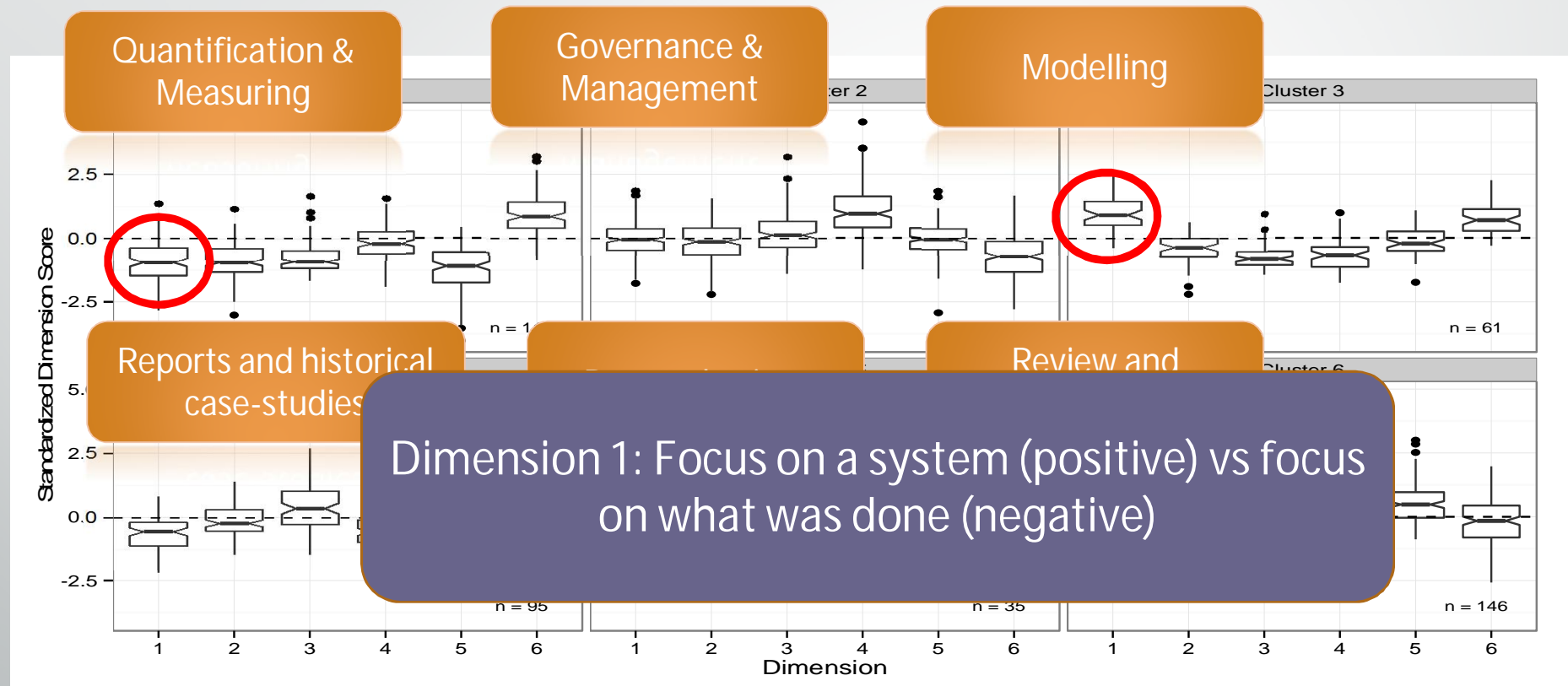
Dimension Profiles of Each Constellation



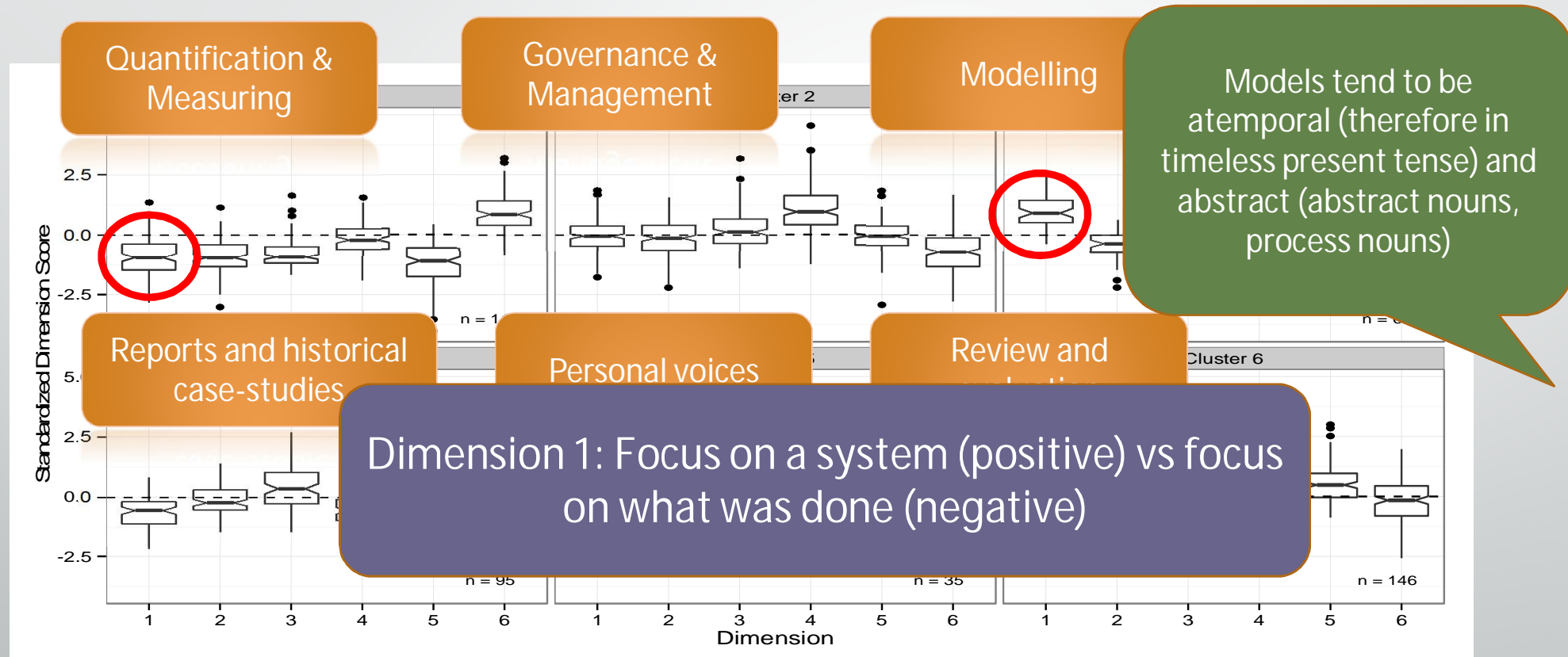
Dimension Profiles of Each Constellation




Dimension Profiles of Each Constellation



Dimension Profiles of Each Constellation



- 
- 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 Corpus Tool, Nvivo

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