

## Complex, but in what way? A step towards greater understanding of academic writing proficiency

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It is widely acknowledged that linguistic complexity is a mark of language proficiency, and until fairly recently this was measured in terms of the ability to subordinate clauses, as identified by T-unit length, for example (Beers and Nagy 2011). Although Halliday (1985) drew linguists' attention to the greater phrasal density of formal writing, it has taken advances in multidimensional analysis (MDA) to fully demonstrate the ways in which professional academic writing is characterised by phrasal rather than clausal complexity (see e.g. Biber, Gray and Poonpon 2011). Nominalisation and complex noun phrases allow writers to focus on things/nouns which can be "frozen in time and examined" (Parkinson and Musgrave 2014). Similarly, agentless passives shift attention from the performers of an action to the informational detail (Staples et al. 2016).

The British Academic Written English corpus (BAWE) was constructed to facilitate the examination of writing that meets the standards for British university study, from first year undergraduate level through to Masters level, in a wide range of disciplines. It therefore represents a wider range of academic writing styles than those that have been examined in previous studies of linguistic complexity, enabling us to make finer distinctions between the ways complexity can be achieved. BAWE assignments can be grouped in terms of level, discipline, and/or genre, following a classification system which identifies 13 'genre families' realizing different social and educational purposes.

Staples et al.'s (2016) MDA study of a subset of the BAWE corpus found a decrease in clausal features and an increase in phrasal features across levels of university study, although this was more visible in science writing than in humanities texts. Our MDA study of the entire BAWE corpus (Gardner, Nesi and Biber 2018) builds on these findings, but also reveals how writers' choices of phrasal and clausal features are affected by discipline and genre. These findings are important for students because if they produce the wrong genres or write in a discipline-inappropriate way they will probably fail their assignments.

Table 1 shows how four distinct clusters of linguistic features relevant to complexity are positioned at the positive poles of our Dimensions 1, 2 and 4, and the negative pole of Dimension 1.

<b>Dimension 1 positive: Compressed Procedural Information</b>		<b>Dimension 2 positive: Personal Stance</b>	
Premodifying nouns	0.69	Mental verbs	0.75
Common nouns	0.60	Stance verbs + that clause	0.60
Passives	0.56	Stance verbs + to clause	0.54
Action verbs	0.53	<i>That</i> deletion	0.52
Concrete nouns	0.52	Communication verbs	0.47
Quantity nouns	0.43	1 <sup>st</sup> person pronouns	0.40
		Past tense verbs	0.39
<b>Dimension 1 negative:</b>		<b>Dimension 4 positive:</b>	

Stance toward the work of others		Informational Density	
Communication verbs	-0.39	Word length	0.87
Stance adverbials	-0.39	Nominalisations	0.80
Proper nouns	-0.40	Attributive adjectives	0.50
Stance nouns + that clause	-0.44	Abstract nouns	0.35
3 <sup>rd</sup> person pronouns	-0.55		

**Table 1: Four types of complexity bundles of features in BAWE**

Each of these clusters is associated with a different type of text. Phrasal complexity achieved through passivisation and premodification (Dimension 1 positive) is typical of report genres in the sciences, whereas nominalisation and adjectival premodification (Dimension 4 positive) is more typical of Social Science essays, particularly at Masters level. Clausal complexity is favoured by essays in the soft disciplines and by more ‘conversational’ genres, but the former use epistemic adverbials and stance nouns with *that*- clauses (Dimension 1 negative), while the latter use more stance verbs (Dimension 2 positive). In Table 2, excerpts from BAWE corpus texts illustrate the features associated with each of these situational contexts.

<b>Dimension 1 positive: Compressed Procedural Information</b>	<b>Dimension 2 positive: Personal Stance</b>
Science Methodology Recounts & Design Specifications	Narrative Recounts (Reflective writing) Problem questions
e.g. Unlike the <i>petrol four-stroke cycle</i> that compresses a <i>fuel and air mixture</i> , the <i>diesel cycle</i> compresses only the air. (4 <sup>th</sup> year Engineering Methodology Recount)	e.g. <i>I</i> could have <i>mentioned</i> the school nurse or given the child line number, but <i>decided that I wanted to alert</i> the child to the fact that they can <i>contact</i> someone... (2 <sup>nd</sup> year Health Narrative Recount)
<b>Dimension 1 negative: Stance toward the work of others</b>	<b>Dimension 4 positive: Informational Density</b>
Arts & Humanities Essays Levels 1 and 2	Social Sciences Level 4
<i>Donne's</i> dependency on <i>God</i> ... draws parallels with Calvinism in the <i>belief that</i> a man who raised up the dead can <i>certainly</i> convert people... (2nd year English Essay)	...the <i>effectiveness</i> of the <i>various</i> strategies in the <i>implementation</i> of <i>nationalistic education</i> . (4 <sup>th</sup> year Sociology Proposal)

**Table 2: Situational characteristics of complex texts**

Recognition of the differences between these two types of phrasal complexity and two types of clausal complexity could make a big difference to the way university-level writing is taught.

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