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# English for Specific Purposes

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## A response to “To what extent is the Academic Vocabulary List relevant to university student writing?”



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### ABSTRACT

In this paper we offer our comments on “To what extent is the Academic Vocabulary List relevant to university student writing?”.

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### 1. Introduction

In Philip Durrant’s article in this issue, he analyzes the coverage of our Academic Vocabulary List (AVL) across 31 disciplines of university student writing (BAWE Corpus), concluding that only a relatively small subset of AVL lemmas (427 of 3,000) appear to have an impact across the disciplines, with most of the AVL not being worth students’ time and attention. We appreciate the opportunity to address these and other conclusions in the article, and we believe that healthy dialogues such as these can move the field forward in productive ways.

Before beginning our response, we wish to acknowledge some major contributions of Durrant’s article: first, he has done an excellent job of contextualizing the historical role of word lists in the research literature and in academic instruction; and second, validation studies such as this are absolutely crucial before pedagogical word lists and other corpus-generated products are put into widespread use. In short, we need to know the true possibilities and limitations of such tools. In the case of the AVL, we knew from the outset that our list was fairly raw because it was generated through quantitative statistics without any post-hoc subjective assessments and refinement. We also recognized that the list was not perfect by any means—that a few of the words on the list were suspect—but we were determined to leave the list “as is.” Durrant’s study of BAWE student writing brings the AVL to a real-world application, where we can begin to unpack the list and make much needed recommendations for its implementation. In our original article ([Gardner & Davies, 2014](#)), we were constrained by the need to establish the linguistic viability of the list, and we had very little space to discuss details of application.

Our main concerns with Durrant’s article have to do with the constructs the author attempts to establish, his assumptions about the role of the AVL in academic research and instruction, and what we consider to be unwarranted conclusions based on these issues. By addressing these concerns, we also hope to clarify some misconceptions about the relative value of corpus-generated pedagogical word lists in language education and research. Our concerns are as follows.

**Concern 1.** We take strong exception to the author’s use of university student writing (mostly undergraduate) to represent “disciplinary writing,” especially when it is used to judge the utility of the AVL, which is based primarily on a

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**Table 1**  
427 AVL lemmas with Impact in the BAWE Corpus.

AVL Frequency Tiers	#	%
1–500	357	83.6
501–1,000	66	15.5
1,001–1,500	3	0.7
1,501–2,000	0	0.0
2,001–2,500	0	0.0
2,501–3,015	1	0.2
<b>Total</b>	427	100.0

higher overall level of disciplinary materials (published articles, research reports, etc.). For us, the author's findings are actually a nice validation of the AVL, both in terms of the lemmas that actually do cross over the disciplines of student writing, as well as those that do not. This is because the AVL is based primarily on established disciplinary writing (the target), whereas the BAWE corpus is based on emerging disciplinary writing (the process). The fact that the author found a statistically significant difference in the presence of AVL lemmas by educational level is a partial validation of this argument, although this finding is downplayed in the article itself.

A second validation is the very fact that BAWE student writers did not consistently use the breadth or depth of academic vocabulary found in the AVL. We do not see this as diminishing the value of the expanded AVL (as the author does), but as an indication of the level of writing being analyzed—the BAWE Corpus of student writing. To illustrate this point, we analyzed the 427 AVL lemmas presented by the author as having utility in the BAWE Corpus, and provide the results in [Table 1](#).

It is clear that the list of 427 AVL lemmas comes primarily from the highest frequency tiers of the AVL, with 83.6% falling within the 1–500 tier and 15.5% falling within the 501–1000 tier—a total of 99.1% in the top 1,000 lemmas of the AVL. Only three lemmas from the third tier (APPENDIX-noun, EFFECT-verb, SITUATE-verb) and one lemma from the sixth tier (FIRSTLY-adverb) are beyond the 1,000 rank. The author might choose to look at this as additional evidence that the expanded AVL (beyond the 1,000 rank) is of little or no use to students, whereas we view this as commenting on the academic sophistication of the BAWE student writing.

To further illustrate this point, [Table 2](#) contains examples of conceptually-related AVL lemmas with their corresponding frequency ranks on the AVL. The data is borrowed from a study in process ([Hart & Gardner, in process](#)). It is clear from these examples that the AVL contains many sets of conceptually-related academic words that are situated on a cline from less sophistication to more sophistication, corresponding to their relative frequency rankings. Additionally, the lemma alternatives in each set are thesaurus-like—i.e., they exhibit similarities in meaning, but also nuanced differences. We would fully expect the BAWE students, as developing disciplinary writers, to employ more words towards the less-sophisticated end of the cline than towards the more-sophisticated end (characteristic of “the process”). However, the university textbooks, published articles, and other materials that such students are typically asked to negotiate in their disciplines (the target) will certainly contain a higher proportion of more sophisticated AVL lemmas than the students' own writing. The fact that the more sophisticated lemmas (above the 1,000 rank) do not show up with regularity in the BAWE Corpus is completely understandable, but that does not mean they are unimportant targets for both students' understanding of advanced texts and the development of more mature academic writing.

To put this all another way, we would fully expect that a discipline-based corpus of primary or secondary school writing would contain even fewer sophisticated AVL lemmas and perhaps even be at the level of the “Basic Meaning” words in [Table 2](#), which we often refer to as pre-AVL words and concepts. Again, the absence of sophisticated academic vocabulary in the compositions of developing writers is not evidence that such words are unimportant now or at some future date for those writers. In this regard, “frequency” must be considered as being relative—i.e., AVL lemmas at the top of the list will almost always have higher overall frequencies in academic materials than those at the bottom of the list, but this advantage will tend to narrow as the level of sophistication of the materials increases.

Another way of expressing our concern with the author's interpretation of his data is to consider what would happen in an English for Specific Purposes (ESP) scenario if the key technical vocabulary within a specific discipline were determined by BAWE student writing, rather than the vocabulary used by the specialists within that discipline (scholars, textbook writers, etc.); or if the value of the discipline-specific vocabulary used by such experts were determined by whether or not their students used that vocabulary in their writing; or if we determined the technical words from the vocabulary used in the BAWE corpus and then judged their merits by the vocabulary used by 15- to 18-year-old adolescents in their academic writing.

**Table 2**  
Sample of conceptually-related AVL lemmas with AVL frequency ranks.

Basic Meaning	Part of Speech	AVL LEMMAS (rank)
Pressure	Noun	INFLUENCE (216), DEMAND (257), COERCION (1387), COMPULSION (2069), EXIGENCY (2522)
Imagine	Verb	ASSUME (233), HYPOTHESIZE (1084), ENVISAGE (2086), CONJECTURE (2806)
Major	Adjective	SIGNIFICANT (45), FUNDAMENTAL (400), PROMINENT (666), LARGE-SCALE (999), CONSEQUENTIAL (2541)
Obviously	Adverb	EXPLICITLY (746), UNEQUIVOCALLY (2300), CONSPICUOUSLY (2336), MANIFESTLY (2619), DEMONSTRABLY (2816)

**Concern 2.** We have never claimed that all AVL lemmas are of equal impact in educational materials or for all levels of learners, only that they are found in many disciplines. We simply established statistical parameters for distinguishing between general words of English and academic words of English, and between core academic words (crossing over multiple disciplines) and discipline-specific or technical academic words. While frequency was used in these particular statistics to isolate a core academic vocabulary, it was never assumed that all AVL lemmas would have equal frequency impact within or across academic disciplines. To illustrate this point, Figure 1 contains typical bar-graph distributions of AVL lemmas from <http://www.wordandphrase.info/academic/frequencyList.asp>. In these cases, we have chosen lemmas at the first (RESULT), middle (INCLINATION), and last (PRIORITIZATION) of the AVL. The figures following the number sign (#) are ranks in overall COCA, not the academic sub-corpus.

These distributions can be compared with technical academic lemmas (Figure 2) to show the characteristics of core academic vocabulary (AVL) versus specialized (technical) academic vocabulary.

The bar graphs in Figure 1 clearly show that the three AVL lemmas have unequal distributions across disciplines—similar to Durrant's findings. The key, however, is that they, unlike the technical lemmas in Figure 2, also show a noticeable presence of the lemmas in many of the disciplines, as opposed to one or two of the disciplines only. From a pedagogical perspective, this means that learners will likely encounter these words across the academic curriculum, and that knowledge of these words, and time spent with them, will have important utility.

As advocates of English for Specific Purposes ourselves (Gardner, 2013), we fully agree with the author's suggestion that discipline-specific uses of the AVL should receive priority over generic academic applications. The ideal would be to focus on AVL lemmas within the disciplines where they occur most often, along with the important technical words of those disciplines. Important to learning the core academic words (AVL) within a discipline is that they would then have utility for students in other disciplines as well. Where we disagree with the author is in his claim that only 427 AVL

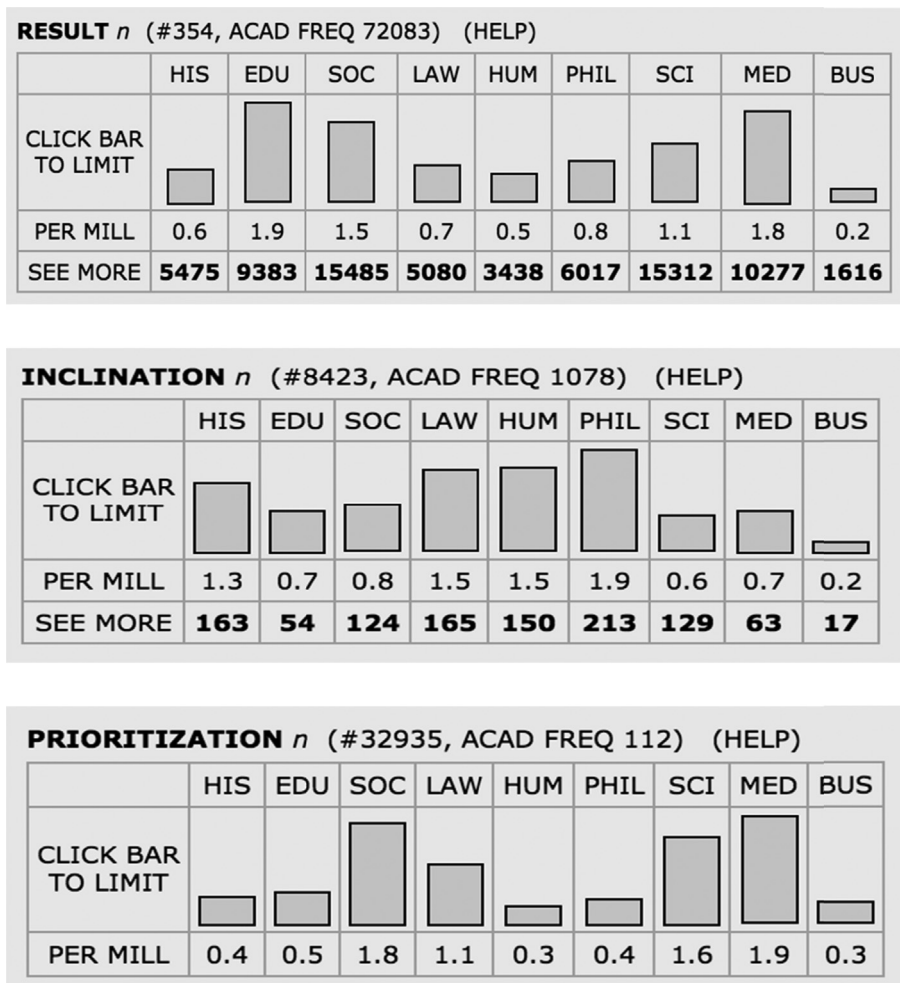


Figure 1. Frequency and distribution of three AVL lemmas with varied ranks.

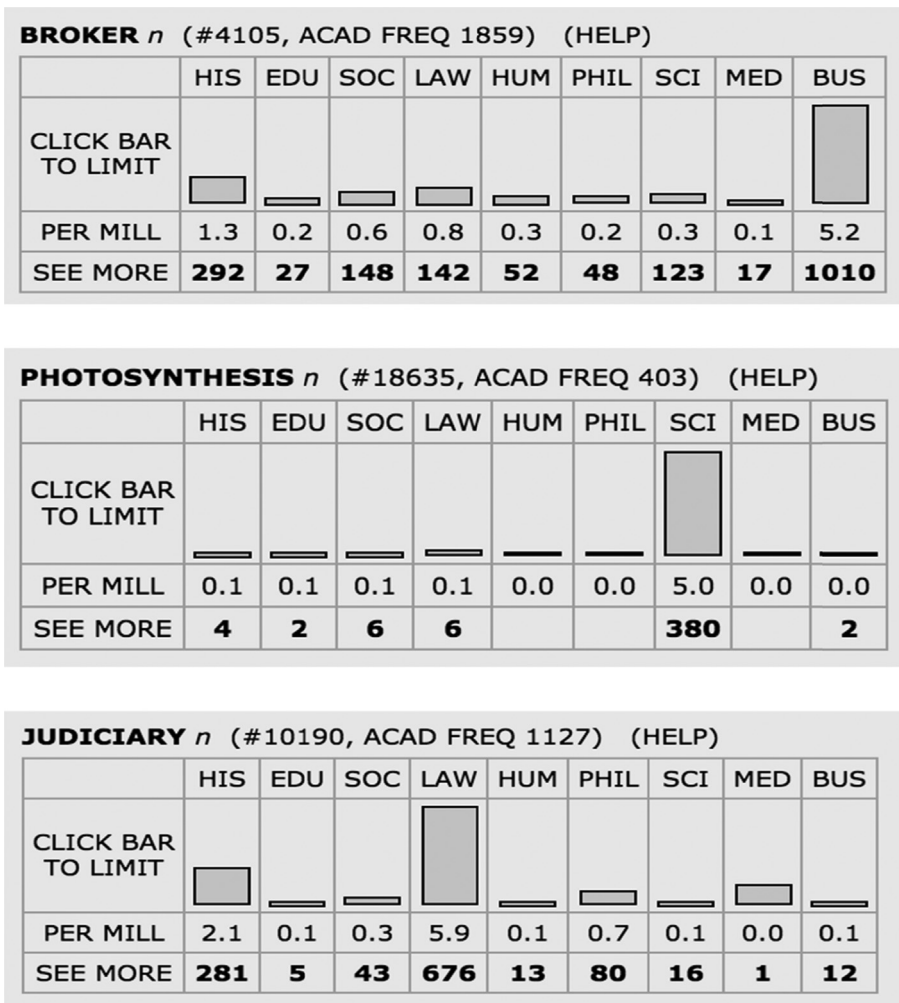


Figure 2. Frequency and distribution of three technical lemmas.

lemmas are potentially useful because the rest do not appear enough in BAWE student writing, and must therefore not be core after all.

When we look at the expanded AVL from a qualitative perspective rather than a strictly quantitative analysis, the “coreness” aspect of the words becomes more apparent, as does the level of sophistication argument we have been forwarding in this response. For instance, Table 3 contains 20 AVL lemmas from the beginning, middle, and end of the list. It is fairly easy to imagine these words being used in many academic disciplines because they are saturated with academic sense. Unlike technical academic words (*broker*, *photosynthesis*, *judiciary*, etc.), it is very difficult to pinpoint one or two related disciplines that these AVL lemmas would fall under. They are, in a sense, the foundation of academic language, providing a linguistic basis upon which specialized academic concepts (including technical terminology) can be built. They are characteristically different than technical vocabulary and also characteristically different than general English vocabulary. To ignore them by either mixing them in with the general vocabulary of English or by mixing them in with discipline-specific vocabulary would, in our estimation, be a serious error.

Also, we would ask readers of this response article to ask themselves if they ever use any of the lemmas in the second and third columns of Table 3—the more sophisticated AVL lemmas. We posit that the answer would be “yes.” Our view is that many of the lemmas outside Durrant’s 427 are important to scholarly writing in general. To demonstrate why we believe this, we took the liberty of tagging and lemmatizing the author’s actual journal manuscript (excluding tables and figures containing AVL lemmas), and determining which AVL lemmas were present in the author’s own writing that were not also in the 427 he deemed important for BAWE student writers. The results are found in Table 4.

It is important to note that we manually verified the lemmas in the author’s manuscript, eliminated the few that were errors because of tagging issues (e.g., *gain* tagged as noun, but actually verb), ensured that no AVL lemmas used by the author

**Table 3**  
Examples of AVL lemmas at three frequency bands.

Rank	AVL Lemma	POS	Rank	AVL Lemma	POS	Rank	AVL Lemma	POS
1	study	n	1501	bridge	v	2996	unidirectional	j
2	group	n	1502	individualism	n	2997	redirection	n
3	system	n	1503	noteworthy	j	2998	reversion	n
4	social	j	1504	impetus	n	2999	obtainable	j
5	provide	v	1505	experimentation	n	3000	privation	n
6	however	r	1506	sequential	j	3001	inborn	j
7	research	n	1507	continuation	n	3002	bimonthly	r
8	level	n	1508	attributable	j	3003	capitalistic	j
9	result	n	1509	disparate	j	3004	circumscribed	j
10	include	v	1510	safeguard	v	3005	targeting	n
11	important	j	1511	suppression	n	3006	unusable	j
12	process	n	1512	subset	n	3007	unpalatable	j
13	use	n	1513	markedly	r	3008	causally	r
14	development	n	1514	concurrent	j	3009	prioritization	n
15	data	n	1515	degrade	v	3010	overemphasis	n
16	information	n	1516	incompatible	j	3011	imprimatur	n
17	effect	n	1517	tenet	n	3012	coherently	r
18	change	n	1518	unify	v	3013	component	j
19	table	n	1519	indispensable	j	3014	tangential	j
20	policy	n	1521	intended	j	3015	relevancy	n

as examples in his prose were included, and identified which lemmas were in the references to the article (bolded in Table 4). We chose to include the references because they are examples of the same level of academic writing as the author's manuscript.

We should also clarify that the AVL lemmas in Table 4 are headwords and may not always be the exact forms in the manuscript. For example, SPECIFY appears as SPECIFIED, INFER appears as INFERRING, etc. Interestingly, the vast majority are in the headword form in the actual manuscript. There are also very rare cases where the tagged form of the word does not accurately reflect its context-specific function (e.g., NORMALIZED, tagged as a verb, functions adjectivally in *normalized frequencies*).

To reiterate, the AVL lemmas in Table 4 are not part of the 427 that Durrant identified as being salient for BAWE student writers. Also, the vast majority that do fall within the BAWE 427 list (over 200 different lemmas) come from the 1–500 frequency tier of the AVL, explaining why the 1–500 column in Table 4 contains fewer lemmas than the 501–1000 column. Several important conclusions can be drawn from the AVL lemmas in Table 4:

1. First, a total of 142 different AVL lemmas beyond the BAWE 427 list were used in the author's manuscript of roughly 7,000 running words. Unavailable for view in the table is the fact that many of these lemmas occur multiple times (DISCIPLINE\_N = 67; ACADEMIC\_N = 15; EVALUATE\_V = 11; FREQUENT\_J = 11; JOURNAL\_N = 10; GENERIC\_J = 10; PERCENTAGE\_N = 6; RECEPTIVE\_J = 4; CAVEAT\_N = 4; SKEWED\_J = 2; etc.).
2. The meanings of the lemmas do not characterize them as belonging specifically to the discipline within which the author is writing. Instead, they are saturated with academic sense. One would be hard pressed to assign a discipline to these words merely by visual inspection.
3. The distribution of words across the frequency tiers suggests that the author's article is an excellent example of sophisticated (scholarly) academic writing (the target) because he employs many AVL lemmas beyond the 1–500 tier, and across the full range of AVL tiers.

We submit that the author's article is typical of scholarly writing, and that with a sufficient sample of articles like this across many disciplines, we would find that many more than 427 lemmas are core and important for advanced academic purposes. In fact, this is what we attempted to do with the nine major disciplines in the 120-million-word academic sub-corpus used to determine the AVL. To emphasize, we are not suggesting that all tiers of AVL lemmas will be equally frequent, but we do believe they will be highly correlated with the level of sophistication of academic materials, thus providing a useful range of academic vocabulary for lower-to-higher levels of academic need. Settling for a list of 427 of these words would, in our estimation, be throwing the baby out with the bath water.

This may also be the appropriate juncture to suggest that uses of the expanded AVL go beyond the frequency-equals-utility approach taken by the author. For starters, the leveled (tiered) nature of the list could be used to assess learners' academic skills (reading, writing, etc.), and to determine readability of academic texts. Knowledge of what vocabulary is core would also allow researchers, practitioners, and materials developers to determine what is discipline specific or technical.

**Concern 3.** Finally, we feel the author has understated the general coverage of the AVL in the BAWE materials in favor of emphasizing disparities he found between disciplines and even between individual texts.

**Table 4**

AVL lemmas in author's manuscript but not in 427 BAWE list.

AVL 1-500	AVL 501-1000	AVL 1001-1500	AVL 1501-2000	AVL 2001-2500	AVL 2501-3011
ARTICLE_N	ABSTRACT_J	ACADEMIC_N	BREADTH_N	AMELIORATE_V	DELETION_N
CHALLENGE_N	ACCORDINGLY_R	ACCORD_V	CAVEAT_N	APPROXIMATE_J	<b>DERIVATIVE_J</b>
CITE_V	<b>ACQUISITION_N</b>	ADEQUATELY_R	CONCUR_V	IMPRACTICAL_J	REPRESENTATIVENESS_N
CLAIM_N	<b>ADJUSTMENT_N</b>	ARGUABLY_R	DISPROPORTIONATELY_R	INCREMENT_N	SKEWED_J
<b>COMMUNICATION_N</b>	ADVANCED_J	BROADLY_R	DIVERGENCE_N	INFREQUENT_J	USEFULLY_R
CONSTITUTE_V	<b>AGRICULTURE_N</b>	DISCIPLINARY_J	ERRONEOUS_J	INTENSIVELY_R	
CONTENT_N	APPLIED_J	DISPERSE_V	INSTRUCTIVE_J	INTUITIVELY_R	
CREATION_N	ASSIGN_V	DOCUMENTATION_N	MARKEDLY_R	ITALICS_N	
DISCIPLINE_N	AVAILABILITY_N	GENERIC_J	NORMALIZE_V	MAINSTREAM_N	
EMPHASIS_N	<b>CLASSIFICATION_N</b>	<b>HYBRID_J</b>	PRIORITIZE_V	PURPORTEDLY_R	
ENGAGE_V	CONSISTENCY_N	INFER_V	RECEPTIVE_J	RATIONALLY_R	
EVALUATE_V	CONSTRAINT_N	INSUFFICIENT_J	SUGGESTED_J	RECUR_V	
FOCUS_N	DEEM_V	INTERESTINGLY_R	TARGETED_J	SIMPLIFICATION_N	
<b>HISTORICAL_J</b>	DESIRABLE_J	MANUAL_J			
<b>INSTITUTE_N</b>	DIMINISH_V	NOTABLE_J			
INTERPRETATION_N	DISTINCTIVE_J	OVERVIEW_N			
JOURNAL_N	EQUATION_N	PUBLISHED_J			
LANGUAGE_N	EXCLUDE_V	SOUND_J			
LITERATURE_N	EXTENSION_N	STRUCTURED_J			
MEAN_N	EXTENSIVE_J	STRUCTURE_V			
MOREOVER_R	<b>FORUM_N</b>	USEFULNESS_N			
MULTIPLE_J	FREQUENT_J	<b>VALIDATE_V</b>			
<b>PERCEIVE_V</b>	HISTORICALLY_R				
PERCENTAGE_N	INDEPENDENTLY_R				
PLANNING_N	INFLUENTIAL_J				
PUBLICATION_N	INSTANCE_N				
RELATION_N	INTENSIVE_J				
RESEARCHER_N	LABEL_V				
REVIEW_V	LOGIC_N				
<b>REVOLUTION_N</b>	MODIFICATION_N				
SURVEY_N	OCCURRENCE_N				
TECHNICAL_J	OVERALL_R				
USER_N	PARTIAL_J				
	PRECISELY_R				
	PREMISE_N				
	PRODUCTIVE_J				
	PROMINENT_J				
	QUANTITY_N				
	RATIONALE_N				
	REGARDLESS_R				
	REGARD_N				
	RELATED_J				
	RELEVANCE_N				
	RELIABLE_J				
	REPRESENTATIVE_J				
	REPRODUCE_V				
	RESTRICTION_N				
	SPECIALIZED_J				
	SPECIFY_V				
	STATISTICAL_J				
	STATISTICS_N				
	STRENGTHEN_V				
	SUBSTANTIALLY_R				
	SUMMARY_N				
	UNDERMINE_V				
	WEAKNESS_N				

N = noun; V = verb; J = adjective; R = adverb Bolded = AVL Lemmas in references of author's article.

“The overall means of around 34% of lexical words suggest that the AVL is a good learning investment for students in general. However, there is a great deal of variation between texts, with lexical coverage ranging from 2% to 62% of lexical words. This suggests that the AVL may be more useful for some writing purposes than for others.” (p. 49–61)

Again, we make no claims that the AVL will be equally represented in all types of writing or with all types of writers (see concerns 1 and 2 above). However, we do feel that coverage of 34% (more than one in three) of the content words in a corpus of academic writing is worth more than a passing note. For one, lemmas are constrained by part of speech and inflectional relationships only and cannot be expected to cover as much language as liberal word families, which make no distinctions based on part of speech. It is also the nature of sub-technical vocabulary (like the AVL) that it is not assumed to cover as much

material as general high frequency vocabulary (Nation, 2000). A worst case content-word coverage of “21% for Classics” (“10.25%” of the running words) to a best case content-word coverage of “40% for Economics” (“21.54%” of the running words) (p. 49–61) is quite phenomenal for a list of sub-technical vocabulary. In our view, the author’s rush to show distribution inequalities between disciplines has obscured the importance of this finding.

To conclude, we believe Durrant’s work has begun the important process of unpacking the raw AVL for practical applications. Specifically, he has clearly shown that attention should be given to discipline-specific uses of the AVL. Our response here was not to dispute these aspects of the article, but to strongly suggest a different interpretation of the author’s data that more carefully considers the level of writing used by the author to judge the utility of the expanded AVL.

From our standpoint, the findings say as much about the student writing in the BAWE corpus as they do about the AVL. In fact, we see the data as a partial validation of the expanded AVL, in that many of the AVL lemmas we have found in more sophisticated academic writing are not found with great utility in the student writing. Additionally, those that are found with greater utility come from the higher frequency tiers of the AVL, which correspond to lower general levels of sophistication. Unlike the author, we believe the bulk of the AVL still has a useful place in academic training and research, and we hope that others will continue to investigate these possibilities.

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