

ABRIDGED ABSTRACTS: RUSHING THE RESEARCH RACE?

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ABSTRACT

Through manual and electronic corpus analysis, I explore the rhetorical structure and discursive features of abridged abstracts in two distinct fields: Applied Linguistics and Electronic, Telecommunications and Computer Engineering. My goal is to discuss whether shortened abstracts, which do include some apparently superfluous elements, are truly informative, and to compare trends in the two broad fields mentioned. According to my findings, abridged abstracts withstand a tension between two opposing forces: rhetorical economy on the one hand, and meta-reference and self-promotion on the other. My claim is that, although dispensable, meta-reference and self-promotion fulfil important beaconing functions that facilitate text production and accelerate research screening.

KEY WORDS: ESP, EAP, genre analysis, abridged abstracts, meta-reference, promotional language.

RESUMEN

Mediante un análisis de corpus manual y electrónico exploro la estructura retórica y los rasgos discursivos de los resúmenes abreviados en dos campos diferentes: la Lingüística Aplicada y la Ingeniería Electrónica, Informática, y de Telecomunicaciones. Mi objetivo es analizar hasta qué punto estos resúmenes abreviados, que curiosamente incluyen elementos en apariencia superfluos, son informativos. Según mis hallazgos, este tipo de resumen soporta una tensión entre dos fuerzas opuestas: economía retórica por una parte, y meta-referencia y autopromoción, por otra. Mi conclusión es que estos dos últimos elementos, aunque prescindibles, balizan contenidos específicos, facilitando con ello la escritura y agilizando la criba de información.

PALABRAS CLAVE: IFE, IFA, análisis del género, resúmenes abreviados, meta-referencia, lenguaje promocional.

In this globalized world, where science has become a commodity and leading-edge technologies succeed one another vertiginously, the screening of research is ever faster. Added to textual practices such as structured and graphical abstracts, keywords and research highlights, is the need to incorporate verbal 'summaries of summaries' in conference programmes and certain highly-cited journals, with the



purpose of providing core information graspable at a glance and facilitating indexation. Yet a number of inevitable questions arise: How 'informative' can these abridged abstract versions be? Are they rhetorically complete, including the whole IPMRD/C¹ sequence proposed by Swales (*Genre*) and Bhatia? Could we speak of specific patterns in these textual practices? Do they differ from the disciplinary full-abstract 'snapshots' given by Hyland and Swales (*Afterword*)? In this paper I will try to find answers to these questions and outline the direction abridged abstracts are taking nowadays in two distinct disciplines and contexts: an engineering journal and the programme of a well-known and crowded conference event in Applied Linguistics.

1. INTRODUCTION: TRACING THE EVOLUTION OF THE ABSTRACT GENRE

The objective of abstracts, according to Swales and Feak (*Abstracts 1*) is to summarize longer texts with "maximum efficiency, clarity, and economy," which is feasible within their average length of 250-350 words and in the more extended format of the doctoral dissertation variant, in general up to 500 words. However, the compressed space of abridged versions (normally of 50 words or less) may compromise clarity and efficiency for the sake of economy, unless the target readership is a very specific community of practice (Wenger), an orientation counter to the current trend of inter-disciplinary collaboration in scholarly circles. Berkenkotter and Huckin's study on high-rated humanities conference abstracts concludes that successful gate-keeping descriptors are a clearly-defined problem, some marker of novelty, special or 'buzzy' terminology, explicit or implicit references to specialized literature in the field, and a topic of interest to the experienced members of the community. This list could be perfectly well applied to abstracts in any academic situation, but there is hardly room for all of the items in an abridged abstract, at least in an overt manner. Topical interest or 'newsworthiness', novelty, and problematization are for example inherent in Engineering and therefore usually taken for granted, although not in other disciplines. As for scholarly references, they seem to be a requisite of conferences only: Huckin defines the abstract as a "stand-alone mini-text" that summarizes the topic, methodology and main findings of an investigation and offers a "road-map" to the full article or presentation. The inclusion of references to the literature would in principle clash with this necessary condition of "independent text."

From a diachronic perspective, discourse analysts have drawn attention towards the evolving patterns that have emerged in conventional unabridged abstracts in the past decades. Hyland, for example, underlined their growing length

¹ Introduction>purpose>method>results/product/outcome>discussion/conclusion. This sequence reflects the habitual structure of the research article and was originally proposed by Swales (*genre*) without the 'purpose' move, which he subsumed in the introduction. It was Bhatia (*analyzing*) who gave it prominence as a separate move.



and informativeness, as well as the increased length of the results/product/outcome move and the expansive inclusion of discussions/conclusions in the hard sciences, Philosophy and Marketing between 1980 and 1997. More recently, Swales (Afterword) has noted four major cross-disciplinary trends: an increasing use of hedges and boosters, of locational metatext (e.g. “In this paper/study...”) accompanying promotional items, a stricter move structure, especially in structured abstracts, and a decline in the incidence of evaluative adjectives. Studying rhetorical variation under a disciplinary lens, Hyland detected a low proportion (21%) of conclusions in all types of sciences—soft and hard—and interpreted this fact pragmatically as a writer’s “tact act” to avoid imposing views on readers. Two other telling findings derived from his corpus study were that introductions are much more frequent in the soft disciplines (oriented at defining and discussing issues rather than at establishing empirical truths), whereas methods tend to be specified in the hard fields (in more than 60% of samples), especially in Physics and Engineering. The few hard-knowledge introductions (only 30% of cases) usually consisted in appeals to novelty and benefit, while those in Marketing, Applied Linguistics and Sociology, were more numerous (over 60%) and largely emphasized the centrality of the investigation.

In some research areas, though, abstract standardization has been low over the last forty years even with electronic publication: according to Okamura and Shaw, features like length, move sequences, discourse style and format have barely changed across disciplines such as Marketing, Economics and Cell Biology in highly-ranked journals, but collective authorship, as evidenced in first-person plural pronouns and adjectives, is becoming more common. In what follows I will examine the picture presented by abridged Engineering and Applied Linguistics abstracts, comparing it with these discursual tendencies and snapshots.

I.1. THE CONTEXTS OF ABRIDGED ABSTRACTS

In Swales and Feak’s (*English* 63) words, abridged abstracts not only “convey the main points of the paper” but also “function as advertisements to attract an audience.” Contrary to what might be expected, word reduction does not exclude the promotional component, which might be deemed superfluous for a maximum length of 50 words. If this promotion is not only expressed by means of evaluative adjectives and adverbs (e.g. “accurate,” “efficiently”) or with signalling nouns and verbs (e.g. “optimize,” “applicability”) but makes use of longer emphatic structures such as cleft and pseudo-cleft sentences, gradable intensifiers, or syntactic inversions, it is then very unlikely that all the rhetorical moves in the IPMRD/C sequence are explicit within the constraints of the word limit. And implicitness reinforces the barriers of the community of practice, whose members must be experienced experts capable of deducing tacit information.



1.1.1. IEEE Abridgments: Front Matter Visibility

With over 400,000 members and an active ongoing dissemination of knowledge across the five continents, the Institute of Electrical and Electronics Engineers (IEEE for short) is one of the largest associations of technical professionals worldwide. Its corporate office and operations centre are based respectively in New York City and New Jersey, and its mission statement, as stated online on its website (see <http://www.ieee.org/about/vision_mission.html>), consists in “fostering technological innovation” to benefit the “global community” it inspires. To this end, since its formation in 1963, the IEEE has been organizing professional and educational activities and establishing technology standards for the fields of Electrical, Electronic and Computer Engineering, Telecommunications and allied disciplines, publishing over 1,200 conference proceedings every year. One of its most emblematic and frequently-cited high impact journals, *Proceedings of the IEEE*, is published monthly and may contain more than 20 articles per issue. It advances the contents of its articles with abridged abstracts (hereafter AAs) that appear on the cover page in the table of contents and whose mean length was 27.5 words in 2013, not counting titles, the names of authors and the status of the paper—”invited” or “contributed.”

The superficial examination of any cover of the journal will bear witness to the fact that its AAs are *highly meta-referential* and *syntactically simple*: expressions of the type “this paper/study” (labelled “abstract rhetors” by Thompson and Thetela) and its adjunct variant as complement of a preposition (called “locational metatext” by Swales, Afterword) frequently introduce the purpose of the investigation, succinctly described either by a long qualifying structure within the sentence (Example 1), or by one or more coordinated clauses (2). Subordination is rare.

- (1) The Impact of Offshore Wind Farms on Marine Ecosystems: A Review Taking an Ecosystem Services Perspective by S. C. Mangi

[INVITED PAPER] This paper reviews the impacts of offshore wind farms on the ecosystem services delivered by marine environments.
Proceedings of the IEEE 101.4 (April 2013). Special Issue on Marine Energy Technology.

- (2) Overview of Beyond-CMOS Devices and a Uniform Methodology for Their Benchmarking by D. E. Nikonov and I. A. Young

[CONTRIBUTED PAPER] This paper studies beyond-CMOS devices in detail and proposes a uniform methodology for their benchmarking.
Proceedings of the IEEE 101.12 (December 2013).

Surprisingly, these two AA examples are no more informative than their corresponding paper titles, and this redundancy makes one wonder whether representative titles would suffice to summarize full abstracts in the front matter of periodic publications. As purpose-marker adjunct, locational



metatext may also open or close passive sentences (3), in a construction that syntactically resembles a certain model of patent abstract abundant on the website of the U.S. Patent and Trademark Office (USPTO) but which does not always include locative elements (4, my emphasis).

- (3) Wedge Optics in Flat Panel Displays by A.R.L. Travis, T.A. Large, N. Emerton, and S.N. Bathiche

| INVITED PAPER | Wedge optics in flat panel displays that can be applied to 3-D viewing are described in this paper.
Proceedings of the IEEE 101.1 (January 2013).

- (4) System, Method, and Computer Program Product for Preventing Access to Data with Respect to a Data Access Attempt Associated with a Remote Data Sharing Session

United States Patent Application 20140283145
Kind Code A1
Chebiyyam; Gopi; et al. September 18, 2014

Abstract

A system, method, and computer program product *are provided* for preventing access to data associated with a data access attempt. In use, a data access attempt associated with a remote data sharing session *is identified*. Further, access to the data *is prevented*.

As can be seen in (5), patent locatives (“the present invention/application”), by contrast, are less common and not inserted as adjuncts in passive structures, but fulfil the role of active inanimate subjects—abstract rhetors—that signpost purpose in a de-personalized way to hedge authorial responsibility.

- (5) Lockout-Tagout and Safety Compliance Systems and Methods

United States Patent Application 20140283008
Kind Code A1
Daino; Franco F.; et al. September 18, 2014

Abstract

The present application discloses systems and methods for systems and methods of creating, administrating, assigning, and managing lockout-tagout (LOTO) procedures and other safety compliance procedures.



1.1.2. AAAL Synopses: Relative Visibility and Personalized Variety

The American Association for Applied Linguistics (AAAL) was founded in 1977 to promote multidisciplinary among the scholars in the field. Today it comprises over 50 country members worldwide, brings together multiple theoretical frameworks and approaches, encourages professional networking, sponsors and disseminates publications, and hosts a four-day annual conference which constitutes its primary activity and has a reputation for the massive attendance of international scholars and the high scientific standard of its paper sessions, colloquia and plenary talks. According to its mission statement online (see <<http://www.aal.org/content.asp?contentid=133>>), the ultimate goal of the association's activities is "to improve the lives of individuals and conditions in society" by facilitating "the advancement and dissemination of knowledge and understanding" regarding a myriad of language-related issues.

In the AAAL's 2013 conference programme (198 pages), the visibility of AAs, 48.2 words long on average, is less conspicuous than it is in the IEEE journal because they do not appear in the booklet's front matter. The summaries of paper sessions cannot be found until page 57, after a detailed introduction of the conference event: the year's topic, messages from the organizers, some notes on the host institution, lists of committees and linguistic strands, registration procedures, acknowledgements to abstract readers and conference volunteers, instructions for chairing, sponsors, panoramic schedules and venue maps, publishers' advertising, a timetable of plenary sessions, the biodata of the plenary speakers and synopses of their talks, more advertising of new books and titles on the market, and overviews of invited colloquia.

A visual inspection of the AAAL corpus reveals on the whole more personalization and a wider variety of syntactic structures, locative metatext and abstract rhetors. The first person pronoun "I," absent in the IEEE corpus, occurs here four times to introduce purpose ("I + will present/analyze/illustrate") or recapitulate results ("I + demonstrate"), while the possessive "my," which is not used by IEEE writers, collocates with "data" and "findings" to introduce the results section and yields two hits in the AAAL texts. The exclusive plural "we," which appears twice in the IEEE samples to indicate purpose ("we provide") or mark results ("we are better at..."), is much used among linguists (19 cases) to signal purpose (collocated with the verbs "report," "discuss," "study," "investigate," "examine" and "attempt at"), results (in collocation with "argue," "found" and "predict"), and in two instances, method ("we + have built/augment").

Syntactic variety becomes especially salient in opening sentences, most often specifying the method employed in the study. The method functions as a "verbal springboard" either leading to the overall purpose of the paper, detailed by verbs of speech and intellectual activity or action such as "examine," "explore," "analyze," "investigate," "trace," "compare," "illustrate," "report," "construct," and "create," or directly to the results (a more infrequent option), marked with verbs of action (e.g. "show," "reveal") or perception (e.g. "find"). The range of structures comprises these constructions (my emphases):



- ADJECTIVAL PRE-MODIFIER + ABSTRACT RHETOR + PURPOSE VERB
- (6) **This corpus-based study examines** linguistic characteristics of interactions between nurses and patients, focusing on (...) *Linguistic Characteristics of Nurse-Patient Interactions: A Corpus-Based Comparison of Native and Non-native English Speaking Nurses*
(Shelley Staples, Northern Arizona University)
- PAST PARTICIPLE PRE-MODIFIER + ABSTRACT RHETOR + PURPOSE VERB
- (7) **Based on** authentic data from a variety of language tests, **this study compares** the impact of (...) *Comparing treatment options for missing data in language research*
(Francois Pichette, Université du Québec, Sébastien Béland, Université du Québec à Montréal, Shahab Jolani, Utrecht University)
- ABSTRACT RHETOR + VERB “USE” + METHOD + PURPOSE VERB
- (8) **This presentation uses** Martin’s Appraisal Theory (Martin and White, 2005) **to trace** the language use of teachers of science in (...) *A Systemic Functional Linguistic Analysis of Teacher Language Use in an Urban Middle School*
(Jessica Braine, University of Cincinnati)
- COMPLEX SENTENCE WITH “USING”/”FOCUSING ON”+ METHOD + ABSTRACT RHETOR + PURPOSE VERB
- (9) **Using** the framework of conversation analysis, **this paper analyzes** (...) *The use of Extreme Case Formulations for upgrades in ordinary conversations*
(Kiyomi Kawakami, University of Iowa)
- PREPOSITIONAL ADJUNCT OF METHOD (E.G. “THROUGH/BY MEANS OF”/”IN”) + ABSTRACT RHETOR + PURPOSE VERB
- (10) **Through** a mixture of classroom observations, semi-structured interviews and stimulated recalls, **this investigation examines** (...) *The True Complexity of Language Learner Silence in Japan: A Mixed-methods Investigation*
(Jim King, University of Leicester)
- (11) **In a combined linguistic landscape** and nexus analysis, **this paper examines** (...) *Signage in a German Bilingual Program: A Combined Linguistic Landscape and Nexus Analysis*
(Roswita Dressler, University of Calgary)



- DEVERBAL NOUN AS ABSTRACT RHETOR + RESULT OR PURPOSE VERB

(12) **Analysis of** multilingual Singaporean students' use of language during peer learning tasks **found that** students demonstrated pragmatic and hybrid competence in (...)

Hybrid Competence: An Analysis of Peer Language Use With Multilingual Learners
(Wendy Bokhorst-Heng, Crandall University, Rita Silver, National Institute of Education, Singapore)

- NARRATIVES OF METHOD (FOLLOWED BY RESULTS OR NOT)

(13) **Ten learners of L2 Spanish completed a** formal contextualized reading task and an informal hint giving/question asking interactive game designed to investigate their L2 intonation. Stylistic variation and L1 transfer **were shown to** be important factors in (...)

Stylistic Variation in L2 Spanish Intonation
(John C. Trimble, University of Minnesota)

Of particular interest is the unique finding of a “negative method description” in the AAAL corpus: it is said what the method “is not” to highlight a break with tradition and hence the novelty of the research. This strategy is not used in the IEEE corpus:

(14) **Rather than categorizing** interlocutors in intercultural interactions simply as the binary notion, Self and Others, **this study employs** the concept of (...)

An Exploration of EFL Learners' Symbolic Competence
(Tsui-Chun Hu, SUNY Buffalo)

In the IEEE samples methods do not open any abstracts. The signalling word “method” (8 cases) never appears in initial position, nor do its indicators “based on,” “-based,” “through,” “using,” or “uses,” which may be found, if prominent, in the title (15). The ample syntactic catalogue of constructions for expressing method in the AAAL texts (examples 6-13) neutralizes the need to use the signaling noun “method,” which is found only three times. With respect to metatextual terms such as “analysis” (a single occurrence—see example 16), they tend to link directly with the results or outcome of the study rather than with its purpose, a strategy widely resorted to by AAAL writers.

(15) Tunneling Transitions Based on Graphene and 2-D Crystals by D. Jena
Proceedings of the IEEE 101.7 (July 2013).

(16) Multistream Recognition of Speech: Dealing With Unknown Unknowns
by H. Hermansky



| INVITED PAPER | Analysis of data on human auditory processing suggests machine recognition paradigm, in which parallel processing streams interact to deal with unexpected input signals.

Proceedings of the IEEE Vol. 101, No. 5, May 2013

An obvious difference between the two corpora is their use of abstract rhetors (and occasionally of the same items as locative metatext): IEEE abstracts display a “clonal” opening structure consisting of THIS PAPER + PURPOSE VERB, whereas AAAL abstracts broaden the paradigmatic set of options considerably. Their incidences, quantified with the aid of a concordancer, are shown in Table 1 below.

TABLE 1: INCIDENCE OF ABSTRACT RHETORS AND LOCATIVE METATEXT IN BOTH CORPORA (RAW COUNTS).

RHETOR / LOCATIVE	IEEE CORPUS	AAAL CORPUS
<i>Paper</i>	125	31
<i>Study</i>	0	56
<i>Research</i>	0	1
<i>Investigation</i>	0	2
<i>Survey</i>	0	0
<i>Analysis</i>	1	2
<i>Project</i>	0	3
<i>Session</i>	0	1
<i>Presentation</i>	0	15

AAAL writers qualify their work in a more varied fashion and take into account the channel of transmission and the communicative context (e.g. “session,” “presentation”), although in a very low proportion. There is also a specification of the intellectual activity entailed by the work in question (e.g. “study,” “research,” “investigation,” “project,” “analysis”) that is not found in the IEEE corpus. This could lead us to think that either IEEE texts discard dispensable information more successfully than do the AAAL texts (which would explain their shorter average length), or that engineers understand their research outcomes with a “patent mentality”: a stance that is more practical than speculative, critical, or analytical —as mere periodic communications of technical improvements, solutions, problems, or challenge.

2. METHODOLOGY

To complement and refine manual scrutiny, I compiled two electronic corpora: one containing all the abridged abstracts published by the *Proceedings of the IEEE* journal throughout 2013, and another gathering a representative number



of shortened abstracts of paper sessions (not of plenary talks, colloquia or round tables) from the 2013 AAAL Proceedings. The IEEE corpus was composed of 154 samples and totalled 7,809 word tokens and 2,389 word types. The AAAL corpus comprised 160 samples and its size was 11,136 word tokens, 3,413 of which were of different types. I selected the first ten AAs in order of appearance within each conference strand, which were these:

Assessment and Evaluation (ASE)
Bilingual, Immersion, Heritage, and Language Minority Education (BIH)
Language and Cognition (COG)
Corpus Linguistics (COR)
Analysis of Discourse and Interaction (DIS)
Educational Linguistics (EDU)
Language and Ideology (LID)
Language, Culture, and Socialization (LCS)
Language Planning and Policy (LPP)
Second and Foreign Language Pedagogy (PED)
Pragmatics (PRG)
Reading, Writing, and Literacy (RWL)
Second Language Acquisition, Language Acquisition and Attrition (SLA)
Sociolinguistics (SOC)
Language and Technology (TEC)
Text Analysis (written discourse) (TXT)

First manually, and then electronically with the concordance program *Ant-Conc 3.2.1w* (Anthony), I examined my corpora samples to determine their *rhetorical structure* (i.e. genre moves, among which I included that of “purpose” following Bhatia, 1993) and to compare it with that of full abstracts in similar fields described by Hyland. I quantified the incidence of the introduction, method and discussion/conclusion sections in both corpora and made a distinction between minor and major move sequences, the latter present in at least two samples of each corpus. In passing I confronted rhetorical move economy with meta-referential traits (i.e. third person mentions, locative metatext and abstract rhetors), and next I conducted a quick Word List search of the most common 100 words in each corpus, to see the frequency and distribution of promotional items, supposedly also superfluous. Then I went on to analyze, once again manually and automatically, the weight of different promotional features in the two contexts which were the object of study.

To do so I refined the promotional categories proposed by Hyland (2000/2004), replacing two of them (“benefit” and “interest”) by two other more specific (“efficacy” and “applicability”) and adding another two (“broad scope” and “reliability”) to the existing categories of “importance” and “novelty.” Finally, and once more combining manual and electronic analysis, I looked for the most frequent markers within each promotional category in each corpus.



3. FINDINGS AND DISCUSSION: SPOTTING THE SUPERFLUOUS

Close manual analysis revealed a striking fact: unlike in Hyland's study, methods did not constitute a "minority move" in the soft disciplines. The Hyland corpus had yielded the respective percentages of 60% and 30% for the presence of the methods move in the hard and the soft sciences, but my data showed a glaring predominance of methods in the AAAL corpus (84%) and a much lower count (48%) for IEEE texts (see Figure 1). Two simultaneous trends may account for this result: first and foremost, Applied Linguistics is becoming more interdisciplinary and empirical. It has diversified notably in recent times, both theoretically and practically, which has involved importing methods and procedures from other areas of knowledge. Indeed many of the strands and subfields embraced by the AAAL conferences call for a specification of methodologies and perspectives, be they theoretical frameworks within Linguistics (e.g. Systemic Functional Grammar, Positioning Theory, Cognitive and Corpus Linguistics, Socio- and Psycholinguistics, Conversation and Discourse Analysis, Genre Theory, Metadiscursive approach, ESP, etc.) or outside it (e.g. Anthropology, Gender Studies, Semiotics, Narratology, Sociology, Psychology, Chaos Theory, etc.). These inner and outer frameworks may inter-combine and include quantitative and qualitative techniques for data-handling. Secondly, there is the issue of implicitness: in 21% of IEEE samples the move sequence is dubious, a common cause being the confusion between method, purpose and result. Without "method beacons" such as the signalling nouns "method(ology)," "procedure" or "manner," verbs like "use" or "employ," and prepositional phrases such as "through" or "by means of," it is extremely difficult to discriminate the methods move, which may be implicit in long pre-modifiers describing the outcome/product offered by the paper (17):

- (17) Ultrahigh-Resolution Panoramic Imaging for Format-Agnostic Video Production by O. Schreer, I. Feldmann, C. Weissig, P. Kauff, and R. Schäfer | INVITED PAPER | Ultrahigh-resolution panoramic imaging for format-agnostic video production is discussed in this paper; the system has flexibility applied to many video systems.

Proceedings of the IEEE 101.1 (January 2013).

In this example, the reporting verb "discuss," together with the locative "in this paper" are evident markers of purpose. Now, does the adjectival cluster "ultra-high resolution panoramic" denote a method, or just inherent properties of the imaging? What about the qualifier "for format-agnostic video production"? Is the imaging described an outcome/result or a method? Only expert informants from the community of practice can truly discern these move boundaries.

Another noteworthy unexpected finding is that there are many more introductions in the IEEE samples, although these are typical of the soft fields. In his cross-disciplinary study, Hyland discovered a symmetrical reversal of the proportions





of methods and introductions in hard and soft domains, the latter move occurring at over 60% in the social sciences and the humanities. Curiously enough, in my corpora (Figure 1) only 17% of the AAAL abstracts contain introductions, while 45% of IEEE texts include them and with a frequency very similar to that of the methods move (48%). To explain this, it can be argued that Electrical Engineering and Electronics are two research areas in continuous cutting-edge innovation, where the differences between papers may be minimal and consist in details and small variations in methodology, improvements of devices and systems, or in problems of several sorts (e.g. derived from needs or gaps, technological advances, and, of course, ramifications from existing problems). Consequently, introductory research contextualizations (and mostly through problematization) appear more necessary than in other branches of engineering. Introductions may be also justified to promote the research outcome, following the engineer's "patent mentality": around 85% of the IEEE samples contain promotional items that underscore the novelty, benefits, and especially the importance (to which problematization is cardinal) of such an outcome. We must not forget, in addition, that since the 1980s the hard sciences have been gradually increasing their use of introductions and discussions/conclusions. Time will tell whether we are witnessing a bidirectional trend: a "softening" of hard-science abstracts and a "hardening" of soft-discipline ones, as they might be evolving in opposite directions.

Likewise, the tendencies in the use of discussions/conclusions are somewhat different from the ones observed by Hyland, although their impact is also low. In Hyland's corpus this move was present in just 21% of the samples (principally from Biology and Marketing), which he attributed to the "optional" nature of the move due to politeness reasons²: its omission can be taken as a "tact act" that avoids imposing the writer's interpretation of data on the reader. In 24% of the IEEE abstracts there are discussions/conclusions (the percentage is similar to Hyland's global figure), whereas barely 2.5% of the AAAL samples use them (Figure 1). In explanation we may adduce once more that promotion, a usual component of both the introduction and the discussion/conclusion moves, is needed in relatively young disciplines to justify research, especially in prolific fields with high publication rates. Electrical Engineering and Electronics are clear exponents of such a case.

Concerning move sequences, IEEE texts do not diverge much from Hyland's rhetorical snapshot of unabridged Engineering and Physics abstracts: here too the preferred patterns are PMR (purpose + method + results/outcome) and its "promissory variant" with no result/outcome, but proportions in the two studies are dissimilar. Hyland found 60% of PMRs in the said two disciplines, whereas in my IEEE corpus, owing to its great dispersion of moves, the samples that follow a PMR progression do not even amount to one fourth of Hyland's percentage. As can be seen in Figure 2, what is particularly striking is the encroachment of the PM(R) pattern on the AAAL

² In actual fact, all rhetorical moves but the purpose are "optional" and may be omitted in an abstract, although some may be "more omissible than others." which depends on the disciplinary culture. The legend in Figure 1 reminds of this observation.

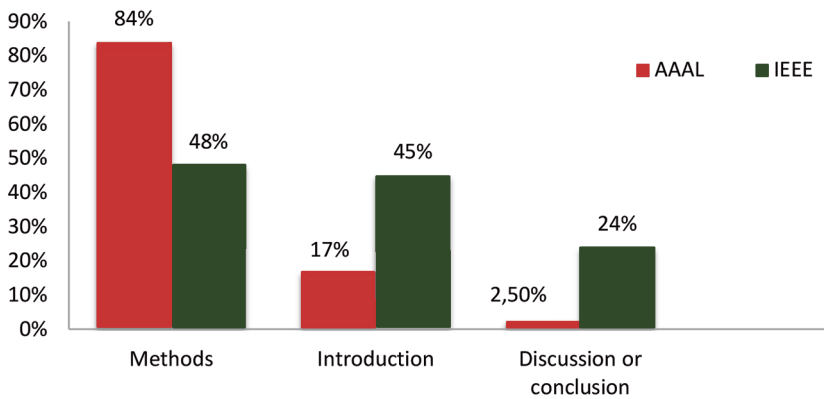


Figure 1. Use of non-obligatory moves in the AAAL and IEEE corpora.

texts, where what we might have expected is the corroboration Hyland’s finding that the IPR sequence runs through 75% of full abstracts in the social sciences and the humanities—I have already commented on the recent shift towards empiricism occurring in Applied Linguistics. No less telling are the small number of four-move and three-move sequences (PMR, IPM and MRD) that have some weight among all the possible combinations. It is important to note that the graph displays sequences present in at least two samples in each corpus, while Table 2 enlists the proportions of the most “significant” minor combinations (the majority of which contain three moves) below that threshold number of occurrences. In light of all this, predictably, AAs seem to save words by economizing moves. Note, for example, that in Table 2 the complete IPMRD pattern is virtually absent, occurring in only a single IEEE case.

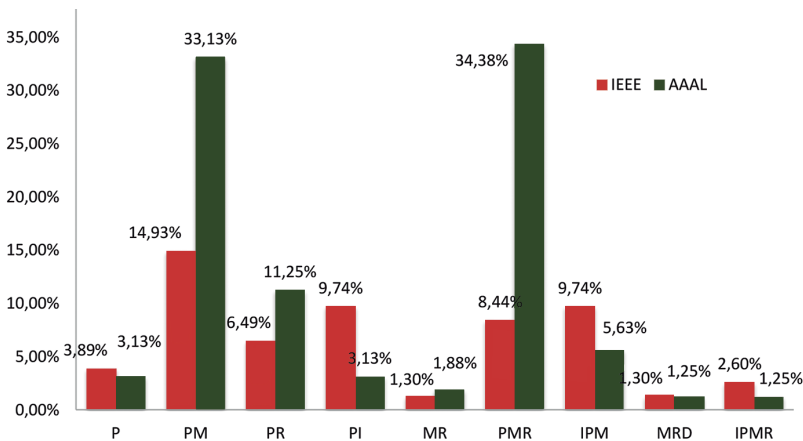


Figure 2. Moves sequences most resorted to in both corpora.



Move economy coexists nonetheless with abstract rhetors and locative metatext, which are superfluous elements because they contribute redundant information: it goes without saying that the information advanced in the abstract is that contained in the current text, so expressions such as “(in) this/the present paper” could easily be eliminated. But oddly, only 18.2% of IEEE samples are free of rhetors and locatives, and in the AAAL corpus the percentage of AAAL texts not including them is only slightly higher—30.6%. Equally counter-intuitive is the distribution of unnecessary third-person references such as “the author(s)” (20 IEEE cases and one in AAAL). There is mention of the “presenter(s)” in AAAL (5 instances) but in none of the corpora do words such as “writer(s),” “researcher(s),” “engineer(s)” or “linguist(s)” appear and neither does “speaker” as a synonym for “presenter” in the AAAL samples.

TABLE 2. MINOR MOVES COUNTS IN BOTH CORPORA (RAW COUNTS AND %).

MINOR MOVES SEQUENCE	IEEE CORPUS	AAAL CORPUS
RD	3 (1.9%)	1 (0.6%)
IPR	1 (0.6%)	1 (0.6%)
IMR	8 (5.2%)	1 (0.6%)
PRD	9 (5.8%)	0
PMRD	3 (1.9%)	1 (0.6%)
IPMRD	1 (0.6%)	0

A last element that could be regarded as superfluous is the promotion of the research activity or of its outcome, as community insiders and informed readers should be able to deduce the value of the paper by themselves, without much explicitness. Promotional items (955 instances) only represent 5% of the total number of words of my global corpus (AAAL + IEEE), but the patterns they exhibit certainly deserve attention. A quick Word List search of the most frequent 100 words in each context shows that the “promotional tinge” appears earlier and is more frequent, varied and specific in the IEEE corpus. General items such as “based,” “applications,” “overview,” “future,” “resolution,” “large” or “performance,” which refer to the novelty of a method, the versatility of a product, the broad coverage of a review of the state of the art, improvements in service, potential applicability and importance or impact scope can be spotted from rank 31, whereas in the AAAL corpus the only three generic items (“implications,” “development” and “results”) are not encountered until rank 71. Specific disciplinary “buzzwords” are also more numerous and can be detected earlier on the IEEE list: “graphene,” “wireless,” “transistors,” and “speech” show where the field is heading for and appear as early as rank 33. In the AAAL corpus the “trendy” items are fewer and pop up a little later (rank 43): they are “Chinese,” “Spanish,” and “Japanese,” which points to the prime importance of studies on second language acquisition and pedagogy or



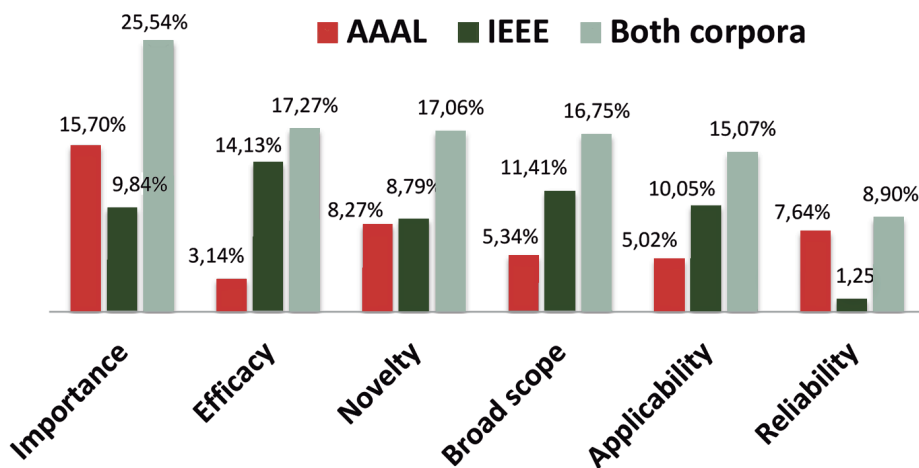


Figure 3. Percentages of promotional items per field and in both corpora.

on intercultural interactions to satisfy the needs of those vast geographical areas, some of them emergent.

In his study, Hyland glossed promotional appeals as “benefit,” “novelty,” “importance” and “interest,” and found that statements overtly claiming the interest value of the work reported—what he calls “brute promotion” (77)—were surprisingly rare in all fields and that, if they occurred at all, it was mainly in non-academic disciplines with a very high practical, applied or industrial orientation, such as Mechanical and Electronic Engineering. For the rest of disciplines, he concluded, it is “too crude a strategy” (77). These two engineering specialties concentrated twice as many promotional items as any other discipline and almost five times as many as Philosophy.

For my cross-corpora comparison I broke down the superordinate appeal “benefit,” which is too vague in the context of engineering, into the more precise subcategories of “efficacy,” “broad scope,” “applicability” and “reliability.” I understand both “benefit” and “interest” as pervading across all these subdivisions and therefore did not select them as independent features. Globally speaking, and as Figure 3 reveals, the IEEE samples are far more promotional than the AAAL ones except in two categories: reliability and importance. The reason is quite simple: in Engineering it is a given that the research outcome (i.e. a device, mechanism, method, design, overview, criticism, etc.) stems from calculations that follow a set of established laws and principles, controls a limited number of variables in (normally) replicable natural or technological situations, and under these circumstances it is empirically tested.

The outcomes of Applied Linguistics, in contrast, are mostly research methods and pedagogical plans seldom devised on mathematical grounds and which have to deal with unique communicative situations comprising multiple human



intentions and idiosyncrasies--thus the need for explicit praise of their validity and consistency. Importance, although higher in the soft knowledge samples, manifests itself differently in each corpus: overt relevance markers were few but slightly more frequent in the AAAL texts (e.g. "fundamental," "essential," "crucial," "key," "important," "importance," "relevant," "relevance," "paramount," "significant," "valuable," "strategic," etc.), and IEEE writers resort more to problematization (e.g. "problem," "solution," "challenge," "solve," "unknowns," etc.). This alternative is not much exploited by AAAL authors, who do not pose problems but identify "risks," "necessities," "inequalities" and "deficits" and try to mitigate them by offering "remedies," "guidelines" and "prompts." They speak of "pervasive" phenomena and most often of the "implications" of their work.

Novelty, efficacy (that is, quality performance) and applicability are at the core of the engineering culture and constitute its reasons for being. The statement of novelty value is perhaps the feature most directly expressed, with items such as "novel," "new," "current," "modern," "future," "discovery," "competing," "advances," "emerging," "recent," "trends," "replace," "change," "insights," or "next generation," and more assertive (somewhat arrogant) terms, such as "seminal," "pioneer(ing)," or "groundbreaking" were not found. Notable differences were also patent within the efficacy category: the nouns "resolution," "advantage," and "high-performance," the adjectives "efficient," "effective," "better," "appropriate," "direct," "rapid," "fast," "accurate," "lossless," "powerful," "realistic," "detailed," "economical," "low" (usually collocated with "cost"), "easy," "systematic," "functional," "smart," "independent," "automatic," or the verbs "optimize," "improve," "minimize," "catalyze" were typical of the IEEE repertoire and contrast with the AAAL hits, which were either broader, more conservative, or less frontal: "suited," "successful," "well-," "beneficial" or "consistent" among the adjectives, "benefit" or "enhancement" for nouns, and verbs like "enhance" or "maintain." This trend echoes the nature of soft disciplines, not so much intended to solve problems as to discuss them and trace their origin and possible repercussions.

The notion of applicability merges the idea of usefulness/utility and versatility/adaptability, overlapping the feature of "broad scope," which also entails considering universality and diversity. The vocabulary of applicability characteristic of the IEEE corpus is formed by the nouns "application," "variability," "flexibility," "potential," "utility," by the adjectives "scalable," "generic," "adapted," "usable," "flexible," "potential," "useful" or "general/generic," by determiners of the type "many," "several" and "various," and by verbs such as "enable," "allow," "permit," and the modals "can," "could" and "may." This lexis is substantially less frequent in the AAAL samples, which stress the usefulness and resourcefulness of research products and processes. Lastly, broad scope is marked by adjectives such as "comprehensive," "full," "unified," "exhaustive," heterogeneous," "wide," "generic," "large-scale," "specific," by the nouns "overview," "review," "perspective," "theory and practice," verbs like "summarize," "integrate," and linkers such as "also" and "as well as." All these terms hint at the central role played simultaneously by specificity and comprehensiveness in engineering publications, which must focus on solving particular problems with the aid of complete and updated re-/over-views of all the tools and procedures available. These periodic summaries are not so necessary in



applied linguistics, where the specification (in the introduction) of the theoretical framework adopted involves tracking its evolution and providing an update with which to relate the present research and prove its currency. Distinctive markers in the AAAL corpus are “further” and “moreover” to signal additional aspects tackled by the research (usually in the introduction, when stating the research purpose), and items such as “rich” and “enrich,” detectable in introductions and discussions but more often in the latter, as a final evaluation of the paper’s contribution.

To conclude I will note that, because of their signposting versatility, the signalling nouns “findings” and “results” acquire a special status as markers of novelty (they introduce new research outcomes), reliability (they imply that the investigation has followed standard empirical procedures), and ultimately, importance (the sole fact that they are reported means that they are interesting and worthy of dissemination). These two nouns are, respectively, 7 and 25 times more numerous in the AAAL corpus than in the IEEE one, which indicates a stronger need in the soft disciplines to show empirical rigour. Their frequently attached verbs “indicate” and “reveal,” and the noun “evidence” appear exclusively in the AAAL samples, and the presence of the collocates “suggest,” “show,” and “demonstrate” in this corpus outnumbers that of the same items in the IEEE texts, which are more akin to the USPTO patent abstracts as far as linguistic economy and syntactic variation are concerned.

4. CONCLUSION: IS AAS’ INFORMATIVENESS REALLY OPTIMIZED?

So far we have seen that the AAs of the AAAL corpus are much longer, more personal, less visible and syntactically more varied than those of the IEEE collection. We have also learnt two counter-intuitive facts: that the methods section is included in Applied Linguistics more often than in Engineering, and that this hard-knowledge field provides the most introductions and discussions. We have found some IEEE abstracts to be less informative than their titles and observed, in every corpus, a discursive tension between a tendency towards *rhetorical economy* (i.e. a predominance of two-move sequences and a recourse to implicitness, especially of methods within statements of purpose and descriptions of IEEE research outcomes) and *superfluous elements* (i.e. promotional items and the meta-reference of locative metatext, abstract rhetors and third-person mentions). Furthermore, data have revealed that for both fields “importance” is the most outstanding promotional feature and “reliability” the least vital one, with the rest of categories (i.e. “efficacy,” “novelty,” broad scope” and “applicability”) occupying an intermediate band with very similar percentages. Individual disciplinary patterns, however, vary, and thus AAAL abstracts are more inclined to showing importance and reliability (which might mirror an intense process of “empiricalization” of the discipline), while IEEE samples prioritize efficacy and applicability. Novelty stands in a no-man’s land between the two corpora, predominating very slightly in the IEEE texts.

How are we to interpret all this? To “optimize” the informativeness of AAs would mean, according to the entry from the Merriam Webster dictionary online,



making texts “as effective or functional as possible,” which theoretically demands doing away with redundancy and any word surplus. Why keep, then, meta-reference and promotion? The avalanche of competing technologies differing in minimal details justifies (brute) promotion, but the reasons for using locatives, rhetors and mentions to the authors/presenters is not so obvious. A possible motivation may simply consist in a mixture of habit and comfort: superfluous wording could be acting as a frame for comfortable templates to introduce a purpose statement. In the AAAL context, the salience recently acquired by the methods section often causes its placement in a fronted opening position (e.g. “Using/By means of..., this study/paper...”), which at the same time defines a template to easily state purpose with a continuing rhetor subject. This would maximize writing and reading speed while working as a politeness device that bridges the gap between the expert in-group and the lay out-group, something that does not happen in the “verbless” USPTO abstracts, for example.

A second plausible explanation (which might combine with the former) is reader-considerateness in the form of metadiscursive engagement: a conscious signalling of moves (“purpose” in this case, and “research outcome” whenever the omissible signalling nouns “results,” “findings” or “data” are used) to minimize reading effort and therefore maximize processing speed and reduce screening time, even though the principle of linguistic economy (Grice’s quantity maxim) is flouted. This interpretation is in line with Hyland and Tse’s conclusions regarding the evaluative function of completive “that” in research abstracts: though perfectly omissible, it marks writer stance, foregrounding many evaluative aspects and subcategories. It is another instance of “superfluous” item maintained out of sociopragmatic reasons and which paradoxically proves that sometimes “more” is “less” in terms of cost. In the case of AAs, nevertheless, it remains to be investigated (by means of questionnaires and interviews with the writers) whether the “optimization through superfluousness” reported here is a planned strategy intrinsic to this clipped variant of the research abstract genre.

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