Research Article Abstracts: Two Macro-Structure Models

The research article abstract is central to knowledge-making in academic discourse, providing a brief, accurate summary of the study. In some senses, the abstract is a *promotional* genre because writers must demonstrate an original contribution and credible membership in a discipline or field (Hyland, 2013). Furthermore, researchers read the abstract to determine if they will read the research article (Berkenkotter & Huckin, 1993). Thus, the abstract is a high-stakes academic text.

Researchers who study academic writing practices across disciplines, adapted two models for the macro-structure of research article Introductions for abstracts: the IMRaD Model and the CARS Model. Note that in the research article abstract, *Conclusions* replaces *Discussion*. This makes sense, given the brevity of abstracts and, more importantly, the purposes abstracts must fulfill as noted above.

NOTE: While the two models show different macro-structural features, the elements of one model do not exclude elements form the other: both fulfill the same purposes. For example, research article abstracts using the IMRaD organizing structure must include a knowledge contribution: Move 3 of the CARS Model. The same holds true for research article abstracts following the CARS Model: researchers must state results.

IMRaD Model (Introduction-Methods-Results-and-Discussion): Adapted for the Research Article Abstract

This first model is typical of research article abstracts in STEM fields (science, technology, engineering, and medicine) and in some social scientific disciplines. This macro-structure, including the use of section headings, is atypical in abstracts in the humanities (see the CARS Model below). Note that the headings or section names in this model are representative or typical, but not definitive: expect to find variation in section names across journals and disciplines.

INTRODUCTION: This move[1] establishes the context of the paper, motivates the research, situates the study within the real world context and/or the research context (i.e., earlier studies), defines terms, states the hypothesis or research question, and highlights the purpose and significance of the contribution. Whether or not an abstract includes citations of the earlier studies depends on disciplinary and authorial style.

METHODOLOGY: In this move, the author describes the study design, which may include information on data, procedures, and method(s) used and, if necessary, the scope and, perhaps, the limitations of the research.

RESULTS: In this move, the author states the main arguments, addresses observations and findings, and suggests solutions to the problem, question, or hypothesis posed in the first move.

CONCLUSIONS: In this move, the author interprets results and draws inferences from them. This move typically includes some indication of the implications and applications (discipline-dependent) of the present findings.

Create-A-Research-Space (CARS) Model: Adapted for the Research Article Abstract

The second macro-structure comes from John Swales' (1990) Create-A-Research-Space (CARS) Model for research article Introductions in English. While these moves can occur in any order, and in cycles, the order of moves below appears common for abstracts, particularly in the humanities. Given the brevity of the abstract vis-à-vis the research article Introduction, and the differing communicative purposes of these two types of academic writing, there are many fewer steps within each move. For the complete CARS Model see the handout "CARS Model – Rhetorical Moves in Research Article Introductions in English."

Move 1: Establishing a Territory (i.e., state of knowledge)
Making topic generalizations and giving background information
and
Reviewing previous research
The topic generalizations, background information and literature review may occur with or without citations, depending on disciplinary and authorial style

Move 2: Establishing a Niche (i.e., lack of knowledge)
Indicating a gap in research: this step is quite common in the humanities and social sciences
and / or
Indicating a problem or need: a problem or need may be identified in the real world or the research world, depending on the discipline

Move 3: Occupying the Niche (i.e., knowledge contribution)
Stating the study's purposes, aims, or objectives
and
Describing the methodology: this may include reference to data and data collection practices
and
Summarizing primary findings, stating the significance or importance, and conclusions of the study

References
Berkenkotter, C. & Huckin, T. N. (2009 [1995]). *Genre knowledge in disciplinary communication: Cognition/culture/power*. New York: Routledge.
Hyland, K. (2013). *Disciplinary discourses: Social interactions in academic writing*. Ann Arbor: University of Michigan Press.
Swales, J. (1990). *Genre analysis: English in academic and research settings*. Cambridge: Cambridge University Press.

[1]In both models, the term "move" refers to a segment of text (e.g., indicating a gap in research, describing the methodology, and so on) with a particular purpose or function.