The Classic Three-move Pattern for Journal Article Introductions

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John Swales is a linguist best known for his work on genre analysis and its application to English for Academic Purposes. Swales analysed introductions to research articles across different disciplines and found a common pattern of three 'moves' as shown below.

The original intent of a master's thesis and doctoral dissertation was (and largely still is) to prepare students to publish research in peer reviewed science journals. Even if you never publish a scientific paper, the three-move pattern is a useful way to organize an introduction in reports, proposals, and other texts commonly used in business and the professions. Here is an outline of the three moves:

Move 1: Establish the field by:
claiming centrality (importance)
and/or
moving from general to specific
and/or
reviewing relevant items of previous research

Move 2: Define a research problem by:
indicating a gap
or
raising a question
or
continuing a previously developed line of inquiry
or
counter-claiming (disagreeing with an accepted approach)

Move 3: Propose a solution by:
outlining purpose/setting objectives
and/or
announcing present research (methodology)
and/or
announcing principal findings (results)
and/or
indicating the structure of the research
and/or
indicating directions for further research
and/or
indicating benefits of the current research

Example 1

Here is an example of the three-move pattern published in the Journal of Construction Engineering and Management, Vol. 119, Issue 1 (March 1993) by J. G. Everett and A. H. Slocum.

CRANIUM: Device for Improving Crane Productivity and Safety

Introduction

Cranes, ranging from small cherry pickers to huge tower cranes, are among the most important pieces of equipment on many construction sites. Because construction cranes operate in constantly changing work environments, heavy reliance must be placed on the crane operator's skills (Shapiro 1988). The mechanical technology used by cranes has improved dramatically in the past several decades, but the techniques for coordinating the crane operator's actions with other craftsmen have not. Cranes "have advanced at such a tremendous pace that technology has, in many ways, outstripped the ability of people to apply these machines safely" (Dickie 1975).

Cranes, ranging from small cherry pickers to huge tower cranes, are among the most important pieces of equipment on many construction sites.	Move 1: Establishing the field by saying cranes are important
Because construction cranes operate in constantly changing work environments, heavy reliance must be placed on the crane operator's skills (Shapiro 1988).	Move 1: Moving from general (cranes to crane operator skills) and reviewing previous research (Shapiro)
The mechanical technology used by cranes has improved dramatically in the past several decades, but the techniques for coordinating the crane operator's actions with other craftsmen have not. Cranes "have advanced at such a tremendous pace that technology has, in many ways, outstripped the ability of people to apply these machines safely" (Dickie 1975).	Move 2: Defining the problem: the gap between technology and crane operator skill Continuing previous research of Dickie
	Move 3: Journal article introductions often do not include move 3

Example 2

Don't think because you do not study meteorology that you will not understand this text. One of the advantages of understanding structures like the three-move pattern is that it helps with comprehension.

Outline of the intro paragraph:

life cycle and development of clouds,
cloud edge mixing (plays an important role)
Studying this process in real clouds involves the use of airborne optical instruments capable of
sampling strategy of current optical instruments
The Holodec
This method allows for
1)
2)

In the **life cycle and development of clouds, cloud edge mixing plays an important role**. Entrainment of subsaturated air affects the cloud at the microscale, altering the number density and size distribution of its droplets. The resulting effect is determined by two timescales: the time required for the mixing event to complete, and the time required for the droplets to adjust to their new environment. If mixing is rapid, evaporation of droplets is uniform and said to be homogeneous in nature. In contrast, slow mixing (compared to the adjustment timescale) results in the droplets adjusting to the transient state of the mixture, producing an inhomogeneous result.

Studying this process in real clouds involves the use of airborne optical instruments capable of measuring clouds at the `single particle' level. Single particle resolution allows for direct measurement of the droplet size distribution. This is in contrast to other `bulk' methods (i.e. hot-wire probes, lidar, radar) which measure a higher order moment of the distribution and require assumptions about the distribution shape to compute a size distribution.

The **sampling strategy of current optical instruments** requires them to integrate over a path tens to hundreds of meters to form a single size distribution. This is much larger than typical mixing scales (which can extend down to the order of centimeters), resulting in difficulties resolving mixing signatures. **The Holodec i**s an optical particle instrument that uses digital holography to record discrete, local volumes of droplets. **This method allows for 1)** statistically significant size distributions to be calculated for centimeter scale volumes, allowing for full resolution at the scales important to the mixing process. **2)** The hologram also records the three dimensional position of all particles within the volume, allowing for the spatial structure of the cloud volume to be studied.

Move 2

Both of these features represent a new and unique view into the mixing problem.

Move 3

In this dissertation, the objective is **to study the mixing structure of cumulus clouds by analyzing** holographic data recorded during two different field projects**. Using Holodec data, it is shown that** mixing at cloud tops can produce regions of clear but humid air that can subside down along the edge of the cloud as a narrow shell, or advect down shear as a `humid halo'. This air is then entrained into the cloud at lower levels, producing mixing that appears to be very inhomogeneous. This inhomogeneous-like mixing is shown to be well correlated with regions containing elevated concentrations of large droplets. This is used to argue in favor of the hypothesis that dilution can lead to enhanced droplet growth rates. I also make observations on the microscale spatial structure of observed cloud volumes recorded by the Holodec.

And here is the outline version:

MOVE 1 Establishing the field		
General	Clouds	play a critical role in hydrological processes and radiative balances which make life on the planet Earth possible (claiming centrality)
	cloud dynamics and development	
	cloud edge mixing	not well understood, i.e. a GAP in our knowledge
	two mixing pathways	much debate concerning their influence on clouds
	measurement	not easy; can only be done reliably with optical instruments
Specific	optical instruments sampling strategies	single particle at-a-time strategy; several deficiencies, has limits i.e. not a good solution
MOVE 2: Define the problem		
	limitations can be overcome with volume-at-once strategy	Gap in our knowledge Don't know the dynamics of cloud edge mixing

	with holography (advantages)	or continuing a previously developed line of inquiry; depends how you want to look at it
	Holodec (optical instrument)	Overcoming the limitations of the current sampling strategy
MOVE 3: Propose a solution		
	outlining purpose/setting objectives	goal: to study entrainment and mixing in a way not possible before
	announcing present research (methodology)	• discuss mixing pathways from first principles • introduce theory of subsiding cloud shells • develop extended version of mixing diagram • develop method to quantify spatial inhomogeneity • characterize Holodec sample volume • analyze data from 2 case studies no great detail
	announcing principal findings (results)	• a conceptual model for overall mixing process • compare observed mixing regions to observations of concentrations of large droplets what *kind* of results, not the results in detail