

## The research article – Swales’ CARS model: Creating A Research Space

This model suggests a **set of patterns in introductions** that facilitate their reading and comprehension.

### Move 1 Establishing a territory

- Step 1 Claiming centrality and/or
- Step 2 Making topic generalization(s) and/or
- Step 3 Reviewing items of previous research

### Move 2 Establishing a niche

- Step 1A Counter-claiming (i.e. asserting something contrary to expectations) or
- Step 1B Indicating a gap or
- Step 1C Question-raising or
- Step 1D Continuing a tradition

### Move 3 Occupying the niche

- Step 1A Outlining purposes or
- Step 1B Announcing present research
- Step 2 Announcing principal findings
- Step 3 Indicating Research Article structure

**Decide which move the following sentences represent:**

	A standard procedure for assessing...has been...
	However, it is not clear whether the use of...can be modified to...
	The objective of this research was to quantify...
	However, this view is challenged by recent data showing...
	This paper hopes to show that...
	Hence, additional studies of...are needed.
	This paper details why ... mechanisms that are presently used are inadequate or not appropriate for ....
	It has been suggested that...(Smith 1989)
	Research has tended to focus on...rather than...
	This paper is structured as follows...
	In recent years, there have been <i>many papers</i> describing...

(see <http://sana.tkk.fi/awe/style/reporting/sections/intros/cars/cars1-1.html> for more examples)

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## KEY

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Decide which move the following sentences represent:

<b>M1 Step 2</b>	A standard procedure for assessing...has been...
<b>M2 Step 1C</b>	However, it is not clear whether the use of...can be modified to...
<b>M3 Step 1A</b>	The objective of this research was to quantify...
<b>M2 Step 1A</b>	However, this view is challenged by recent data showing...
<b>M3 Step 2</b>	This paper hopes to show that...
<b>M2 Step 1D</b>	Hence, additional studies of...are needed.
<b>M3 Step 1B</b>	This paper details why ... mechanisms that are presently used are inadequate or not appropriate for ... .
<b>M1 Step 3</b>	It has been suggested that...(Smith 1989)
<b>M2 Step 1B</b>	Research has tended to focus on...rather than...
<b>M3 Step 3</b>	This paper is structured as follows...
<b>M1 Step 1</b>	In recent years, there have been <i>many papers</i> describing...

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## **MOVE 1: Establishing a Territory**

In the introduction, writers generally start by trying to define a general "terrain" or "layout" of their research territory. This move can describe the current situation, features and characteristics of that area of study, as well as why it is an important field and who has already been working in it. To find out more about this move, click on the steps in the table above.

### **MOVE 1 - STEP 1: CLAIMING CENTRALITY**

The writer states that the topic of research is useful, relevant, important, or worth investigating since it forms part of a lively, significant or well-established research area. Centrality claims frequently serve as topic sentences and are therefore usually followed by evidence to support this statement.

*The effect of...has been studied extensively in recent years.*

*Of the many..., ....have been the most extensively studied.*

*The effects of... have received considerable attention*

*Many investigators have recently turned to...*

*A large body of data concerning...has been reported.*

*In recent years, there have been many papers describing...*

*Recently, there has been wide interest in...*

*In recent years, researchers have become increasingly interested in...*

*Knowledge of...has great importance for...*

*The study of...has become an important aspect of...*

*The theory that...has led to the hope that...*

*The relationship between...is a classic problem in fluid mechanics.*

*A long-standing problem has been to obtain more information on...*

*The well-known...phenomena...have been favorite topics for analysis both in...*

*A central issue in...is the validity of...*

### **MOVE 1 - STEP 2: MAKING TOPIC GENERALISATIONS**

These consist of statements concerning the current state of either knowledge, consensus concerning practice or description of phenomena.

*The general features of... are well known.*

*Plumage coloration is known to influence mate selection in mallards.*

*An increase of Mallards in eastern North America has been well documented.*

*Trouts are believed to be relatively immobile.*

*It is generally accepted that...*

*There is now much evidence to support the hypothesis that...*

*A standard procedure for assessing...has been...*

*Such...methods are often criticized for...*

*It is commonly suggested that...*

*Comparisons of spatially separated populations tend to consist of...*

*These...are often found...*

*...is a common finding in patients with...*

*An elaborate system of...is found in the...*

### **MOVE 1 - STEP 3: REVIEWING ITEMS OF PREVIOUS RESEARCH**

Here, the writer needs to relate what has been found (or claimed) with who has found it (or claimed it).

*Smith (1989) found a clear relationship between...*

*Smith (1989) argued that...*

*Smith (1989) concluded that...*

*It has been suggested that...(Smith 1989)*

*Data have been presented in the literature which show that...(Smith 1989)*

*Observations by Smith (1989) suggest that...*

## MOVE 2: Establishing a Niche

One way that academic writers find a "niche" for their research is by showing that the previous research history is not complete. In other words, that there are aspects of the research field that still require further investigation. The most common way of achieving this is to present a negative evaluation of some feature of the research "territory" described in Move 1. This is often signalled by words expressing a contrast or negative evaluation such as the following.

CONTRAST:	QUANTIFIERS:	VERBS:	ADJECTIVES:
however, but, yet, although, despite, nevertheless, unfortunately	few, less, little, no, none, not	fail, ignore, lack, neglect, overlook, question, prevent, hinder, deter, restrict, limit	unsatisfactory, elusive, inconclusive, ineffective, limited, restricted, scarce, uncertain, unclear, unreliable

### MOVE 2 - STEP 1A: COUNTER-CLAIMING

This step typically follows Move 1-Step 3 (Reviewing Items Of Previous Research) and is used to introduce an opposing viewpoint or show the weaknesses in previous research.

*However, this view is challenged by recent data showing...*  
*However, these studies have failed to recognize the...*  
*However, recent work in our laboratory suggests that...*  
*..., yet these approaches become increasingly unreliable when...*  
*Although these experiments....., they were performed on...and are therefore suspect.*

### MOVE 2 - STEP 1B: INDICATING A GAP (in previous research)

This step typically follows Move 1-Step 2 (Making Topic Generalisations) and indicates an unfilled research "niche" or a new way to approach the research problem that the writer intends to pursue.

*A considerable amount of research has been... but little research...*  
*...has been extensively studied. However, less attention has been paid to...*  
*As a result, no comprehensive theory appears to exist.*  
*Despite the importance of..., few researchers have studied...*  
*Research has tended to focus on...rather than...*  
*The only reported study to date of...covered a limited range of...*  
*...studies have appeared previously in the literature, but measurements were restricted to...*  
*The properties of...are still not completely understood.*  
*Evidence on this question is presently inconclusive.*

### MOVE 2 - STEP 1C: RAISING A QUESTION (about previous research)

*However, it is not clear whether the use of...can be modified to...*  
*In spite of these early observations, the mechanism...has remained unclear.*  
*The question remains...?*  
*How much has the seal population actually decreased?*

### MOVE 2 - STEP 1D: CONTINUING A TRADITION

This step is frequently signalled by causative connectors, such as therefore, hence, consequently or thus, as well as other expressions indicating a need for further research.

*These differences need to be analyzed...*  
*Hence, additional studies of...are needed.*  
*It is desirable to carry out surveys of...*  
*It is of interest to compare....*

## MOVE 3: *Occupying the Niche*

Here, the writer states how s/he intends to fill the gap, answer the specific question or continue the research tradition that was described in [Move 2](#).

### MOVE 3 - STEP 1A: OUTLINING PURPOSES (Why?)

In this step, the writer introduces his/her solution to the problem described in Move 2 by stating the main purpose or aim of the study. Note in the examples below how the verb tense used depends on whether the writer is referring to a physical or abstract concept.

#### PRESENT TENSE:

The present tense tends to be used when the aims are described in terms of the written product, now held physically in the reader's hands.

**(paper, article, thesis → PRESENT tense)**

*The purpose of this paper is to...*  
*The purpose here is to evaluate...*

#### PAST TENSE:

The past tense tends to be used when the aims are described in terms of abstract concepts such as mental enquiry.

**(study, investigation, experiment → PAST tense)**

*The aim of the present study was to elucidate...*  
*The objective of this research was to quantify...*  
*Our purpose was to describe...*

**English can (and actually prefers to) take an inanimate agent as the grammatical subject of the sentence.**

#### HUMAN AGENT:

*In this study, we suggest a 3-step process...*  
*In this letter, we propose a ...algorithm.*  
*In this paper, we attempt to develop a...*  
*In this letter, we provide a novel approach to...*  
*In this paper, we describe novel algorithms for...*  
*In this paper, we present a system for...*  
*In this letter, we analyze the performance of...*  
*In this letter, we present an efficient routing protocol that...*

#### INANIMATE AGENT:

*This paper evaluates the effect on...*  
*This paper presents data on...*  
*This study focuses on a strategy for...*  
*The present study tested...*  
*This thesis proposes a formal procedure for...*  
*This paper introduces a novel architecture for...*  
*This research aims to develop a methodology for...*

### MOVE 3 - STEP 1B: ANNOUNCING PRESENT RESEARCH (How? Where? When?)

This step represents an alternative strategy to that used in Move 3 - Step 1A. Here, the writer describes the aims in terms of the steps taken in the study to reach its objectives (i.e., how the research sets out to accomplish the aims).

*In this paper, we introduce a novel method to...*  
*We use the method of, in which...*  
*An approximation using an algorithm similar to that of [6] is used to evaluate*

*In this paper, we provide a novel approach to model the dynamic behavior of ....*  
*We model the ... for a wide variety of situations. The ... criterion is then applied to detect the ... based on a test statistic, which is a function of the relationship between ... and ....*  
*We also demonstrate how to use this technique in ... systems to maximize ...*

*In this paper, we identify the security problems that ... face by developing an application in which ... would be used in the near future.*  
*This paper details why ... mechanisms that are presently used are inadequate or not appropriate for .... We then describe a new ... model that serves as a countermeasure to ....*

### **MOVE 3 - STEP 2: ANNOUNCING MAIN FINDINGS**

In this step, the writer considers the results to be the most important aspect of the research and therefore reports these as part of the introduction. Beware, not all disciplines allow this in the Introduction Section!

*In this paper, we argue that...*

*Here, we report a new method for...*

*This paper hopes to show that...*

### **MOVE 3 - STEP 3: INDICATING ARTICLE STRUCTURE**

This step is more commonly found in dissertations and theses than in research articles. However, many disciplines that do not use the IMRD structure, such as engineering, the humanities, and economics, typically require writers to preview how the rest of the article will be organized.

First, the writer introduces the structure with a topic sentence:

*We have organized the rest of this paper in the following way...*

*This paper is structured as follows...*

*The remainder of this paper is divided into five sections...*

Next, the writer has three alternative structures that can be used to describe each section (in research articles, reports, and essays) or chapter (in theses or dissertations):

*Author as actor:*

*In Section II, we describe the framework used to...*

*In Section IV, I present the model used to...*

*Text as actor:*

*Section II describes the framework used to...*

*Section IV presents the model used to...*

*Content as subject:*

*In Section II, the framework is described that was used to...*

*In Section IV, the model is presented...*