# A Rhetorical Analysis of English Instructional Text

#### Asst. Lecturer Manaal Jassim Muhammad

Department of English College of Education (Ibn Rushd) University of Baghdad

#### 1.1 Introduction

Instructional texts exhibit certain characteristics that make them interesting for natural language processing, and particularly for natural language generation. Instructional texts are widely available and understandable by many readers and are usually well structured. Compared to other narrative texts, they can be represented more objectively. This representation is generally viewed by means of rhetorical relations between states and operations of instructional texts. More specifically, it is commonly and productively viewed as a hierarchy of operations. Consider the following examples:

# **Telephone instruction**

When instructed, remove phone by firmly grasping top of handset and pulling out. Return to seat to place calls.

# Stay safe of wheels

Wear a safety helmet, your helmet is your most important piece of kit. It will help to protect your head if you fall off your bike! You should never ride without it, even the top cyclists wear them and they come in loads of cool designs!.

Rhetorical relations can be described functionally in terms of the purposes of the writer and the writer's assumptions about the reader. Each rhetorical relation is defined in terms of a distinctive set of constraints on the information presented in the segments related and those segments combinations, on the reader belief states, and on the effect that the writer is attempting to achieve with the relation.

Rhetorical relations are the central constructs of Rhetorical Structure Theory (henceforth RST). RST is a theory of text organization which provides an extensive set of rhetorical relations, a set from which writers systematically choose the particular forms that they feel will produce most effective and communicative texts.

Instructional texts exhibit a rich micro-rhetorical structures integrated into the syntactic-semantic structures of instructions.

The current study addresses this issue in the context of expressing procedural relations between actions in instructional text, i.e., in written procedural directions. It is hypothesized that expressing rhetorical relations in instructional texts might add new dimensions to the understanding of instructions. However, this set of relations is rather limited to the whole spectrum of RST relations.

#### 1.2. Instructional Text

Instructional texts consist of a sequence of instructions designed with some accuracy in order to reach an objective. They refer exclusively to written procedural directions prescribing the performance some sequence of actions to the reader. This type of text can be seen as the expression of a set of actions bearing procedural relationships with one another. In fact, the definition of the instructional genre makes reference to the single fundamental intention of expressing a procedure in an effective way.

An instructional text does not make use of the deep and multi-faceted intentions that are common in argumentative and persuasive text. For example: *Come home by 5: 00. Then we can go to the hardware store before it closes. That way we can finish the book shelves tonight* (Moore and Pollack, 1992, 54).

Instructional texts tend to be more straightforward expressions of actions. In other words, they tend to minimize the distance between language and action. Plans to realize a goal are made as immediate and explicit as necessary; the objective is to reduce the inferences, errors, and misunderstandings that the user may make before acting.

There are central criteria governing the formulation of any set of instructions, such as the paramount need to organise the information into a series of clearly defined stages, to avoid ambiguity, and to bear the level of one's audience clearly in mind.

(Crystal, 1973, 237)

Instructional texts obey more or less to a number of rhetorical structures which depend on the author's writing abilities and on traditions associated with a given domain. In this light, an instructional text generator must take into account two tasks: first, to choose, for each action expression, the appropriate rhetorical relation that best conveys its procedural intention; secondly, to choose the precise grammatical form that will signal this rhetorical relation. For example, the *Purpose relation* can take many conceivable forms, an infinitive clause or a subordinate clause with subjunctive verb or even a proposition followed by a goal.

Press the channel selector to set the reception channel.

Press the channel selector so that the reception channel be set.

Set the reception channel by pressing the channel selector.

# 1.2.1. Instructional Text and Argumentation

Instructional texts are specific forms of discourse, satisfying constraints of economy of means and accuracy. They are in general based on a specific discursive logic, made up of presuppositions, cause and consequences, goals, inductions, warnings, and psychological elements. The sole purpose of a psychological element is to stimulate the user and make him

feel safe and confident with respect to the goals he wants to achieve as well as to optimize a logical sequencing of instructions. For example: Clean the inside surface of the engine block to improve oil return.

From this point of view, an instructional text can be analyzed not only just as sequences of mere instructions, but as an efficient, a one-way (i.e. no contradiction, no negotiation) argumentative discourse, designed to help a user to reach a goal and make the best decision. This type of discourse contains a number of characteristics which are all associated in a way to argumentation.

The instructional text produces explanation. Producing explanation is a rather synthetic activity whose goal is to use the elements introduced by knowledge explicitation mechanisms, to induce generalizations, subsumptions, deduction, relations between objects or activities and the goals to reach. Explanation is a form of argumentation which provides a motivation and an internal coherence to the instructional text. This is particularly visible in the lexical choices made and in the choice of some constructions, including typographic. Instructional genre is basically interactive in that it communicates teaches, justifies, explains, warns, forbids, stimulates, and evaluates, etc.

#### 1.2.2. How to Write an Efficient Instructional Text

In order to generate a coherent and communicative instructional text, the generator of the instructional text must consider three dimensions: 1) cognitive, notions referred to must be mastered and understood by the target user: 2) epistemic, take into account the beliefs of those users, and 3) linguistic, use an appropriate language, adjust accuracy, technical level, visual and typographic structure of the text. The tonality of the text must be adjusted, depending on the style and the domain.

In addition to that, the generator of an instructional text should start from a number of assumptions or presuppositions about potential users, about their knowledge, abilities, skills, beliefs, preferences, opinions, ability to generalize and adapt (i.e. to adapt instructions to their own situation, which is never exactly the one described in the procedure). The procedure of instructional text has then, from this basis, to verify (i.e. reenforce or weaken) presuppositions. The generator has to convince the reader that his text will continually lead to the success of the target goal.

In most types of instructional texts, there are two basic dimensions: an explicative component, constructed around rational and objective elements and a seduction component whose goals are (1) to encourage the user, (2) to help him revise his opinions, (3) to enrich the goals and purposes, by outlining

certain properties or qualities or consequences of a certain action or prevention.

#### 1.3. Rhetorical Structures

Rhetorical structures are of crucial importance in the planning of the instructional text. They first give a semantic to the syntactic structure of the text, secondly, contribute to enhancing the production of well-designed responses, thirdly, allow for the integration of instructional texts dealing with similar objectives, or goals, and finally, used to answer questions with higher accuracy by clearly identifying e.g. instruments (for the instrumental how), risks (via the warnings) and equipment needed (via the prerequisites).

The fundamental basis of the theory of rhetorical structure is that coherent stretches of texts are connected to other coherent stretches of a text by means of complex combinations of rhetorical relations (Jordan, 1992: 185). This theory is a way to account for the functional potential of a text as a communicative message. It describes what sorts of parts texts have and the principle of combining these parts into entire texts.

Rhetorical structures define the relational structure of a text. They show how a text can be recursively broken into smaller segments. These component segments are related to one another by means of rhetorical relations, such as *Purpose*, *Condition*,

Sequence, Justify, etc. Rhetorical relations are the central constructs of Rhetorical Structure Theory.

RST is a descriptive theory that specifies 23 possible rhetorical relations (see Table No.1) showing how two portions of a text are linked for the purpose of communicating a message. The full definition of a rhetorical relation consists of constraints on the text spans related, constraints on the combined span, and the effect. i.e., a description of the relation's expected effect on the reader.

According to RST, most relations are asymmetrical with a nucleus (N) span differentiated from satellite (S) spans. The nucleus span is more central to the writer's intention than the satellite span whose sole purpose is to increase the reader's understanding or belief of what is said in the nucleus. This is based on the idea that the writer has more important and less important goals when s/he sets out to create a text. Purpose, Condition and Result are examples of such relations. The nucleus-satellite relation is represented graphically by a direct arrow from the satellite span(s) to the nucleus span. Sometimes, two related spans are of equal importance, in such a case there is a multi-nuclear relation between them. The multi-nuclear schema relates one or more spans, no span is superordinate or subordinate to any other. The Sequence, Contrast relations are examples of such relations. The related spans form a new span, which can in turn participate in relation with another span until all spans are connected to form a text. The idea behind RST is that all rhetorical relations that can occur in a text can be categorized into a finite set of relation types. The RST is primarily a method of text analysis and generation, its original goals.

Informational Relations	Presentational Relations
Elaboration	Motivation
Circumstance	Antithesis
Solution hood	Background
Condition	Enablement
Otherwise	concession
Interpretation	Justify
Evaluation	Evidence
Restatement	
Summary	
Contrast	
Cause Cluster	
Volitional Cause	
Volitional Result	
Non-Volitional Cause	
Non-Volitional Result	
Purpose	
-	

**Table No.1 The list of the original RST Relation** 

#### 1.4. The Rhetorical structures in Instructional Texts

Instructional texts exhibit a rather stero-typical structure, the set of rhetorical relations used in this genre is rather limited compared to the whole spectrum of RST relations. However, the advantage of RST is that the list of relations defined do not form a closed set, it is susceptible to extensions and modifications to fit a particular textual genre. Vander Linden (1993) and Rösner and Stede (1992) have identified the rhetorical relations typically used in instructional texts. For Vander Linden the most important RST relations are temporal Sequence. Precondition, Purpose, Result and Concurrence. Rösner and Stede identified other relations: until and alternative.

The present study identifies 9 rhetorical relations from the corpora analysis. Here are the definitions (cited from Mann and Thompson, 1987): Condition. Sequence, Circumstance, Purpose, Otherwise Concession, Justify, Evidence, and Non-Volitional Result.

# **CONDITION**

Constraints on N: none

**Constraints on S**: S presents a hypothetical, future, or otherwise unrealized situation (relative to the situational context of S).

**Constraints on the N+S combination**: Realization of the situation presented in N depends on the realization of that presented in S.

**Effect**: R recognizes how the realization of the situation presented in N depends on the realization of that presented in S.

## **SEQUENCE**

Constraints on N: multi-nuclear

**Constraints on the combination of nuclei**: a succession relationship between the situations is presented in the nuclei.

**Effect**: R recognizes the succession relationship between the nuclei.

#### **CIRCUMSTANCE**

Constraints on N: none

**Constraints on S**: presents a situation (not unrealized.)

Constraints on the N+S combination:S sets a framework in the subject matter within which R is intended to interpret the situation presented in N.

**Effect:** R recognizes that the situation presented in S provides the framework for interpreting N.

#### PURPOSE

Constraints on N: presents an activity.

**Constraints on S**: presents a situation that is unrealized.

**Constraints on the N+S combination**: S presents a situation to be realized through

the activity in N.

**Effect**: R recognizes that the activity in N is initiated in order to realize S.

#### **OTHERWISE**

**Constraints on N**: presents an unrealized situation.

Constraints on S: presents an unrealized situation.

**Constraints on the N+S combination**: realization of the situation presented in N prevents the realization of the situation presented in S.

**Effect**: R recognizes the dependency relation of prevention between the realization of the situation presented in N and the realization of the situation presented in S.

#### **CONCESSION**

**Constraints on N**: W has positive regard for the situation presented in N.

**Constraints on S**: W is not claiming that the situation presented in S does not hold.

Constraints on the N+S combination: W acknowledges a potential or apparent incompatibility between the situations presented in Nand S; Wregards the situations presented in N and S as compatible, recognizing the compatibility between the

situations presented in N and S increases R's positive regard for the situation presented in N.

**Effect**: R's positive regard for the situation presented in N is increased (through recognition of the compatibility of situations presented in N and S.

#### **JUSTIFY**

Constraints on N: none.

Constraints on S: none.

Constraints on the N+S combination: R's comprehending S increases R's readiness to accept W's right to present N.

Effect: R's readiness to accept W's right to present N is increased.

#### NON-VOLITIONAL RESULT

Constraints on N: none.

**Constraints on S**: presents a situation that is not a volitional action.

Constraints on the N+S combination: N presents a situation that caused the situation presented in S; presentation of N is more central to W's purposes in putting forth the N-S combination than is the presentation of S.

**Effect**: R recognizes that the situation presented in N could have caused the situation presented in S.

It seems clear that the rhetorical relations identified in the present study are in line with that of Vander Linden (1992). (See section 1.6).

## 1.5. Data Collection and Representation

The data selected for this study is taken from various types of instructional texts, including instructions of everyday appliances. The corpus is made up of 49 producers that have different communicative goals, domains, and intended readers. Typically, instructional texts also include non-procedural information like details of an instrument, but in this paper the focus is on the procedural information that can be represented by a hierarchy of operations. The corpus is divided into three kinds according to the communicative goals.

- 1) Execution texts which are characterized by their simplicity and are aimed at an immediate execution. These texts are typically short, have a low level of lexical specialization, have strong typographical cues and are characterized by their conceptual simplicity. They require little judgment and non-specialized instruments, e.g. cooking recipes, first aids.
- 2) Comprehension texts are characterized by their complexity and are aimed at a possible execution; their goal is to explain, not to tell. These texts have longer procedures, use specialized terminology, have fewer typographical cues and generally

require more judgment, and many and specialized instruments, e.g. loosening wheel nuts, wine-making, glass painting.

3) Hybrid texts exhibit characteristics of both execution and comprehension texts.

Mann and Thompson's RST has been used to encode the rhetorical relations between expressions in the present corpus. RST was developed as a framework for describing text structure, viewed in terms of the semantic and pragmatic relations that hold between text spans at all levels. RST, as an analytic tool has proven flexible and powerful in the field of Discourse Analysis. It has been extensively tested and applied in the areas of text analysis and generation. Moreover, RST provides definitions of all relations to be considered. This is thus increasing the reliability of the analysis and highly proving how secure these underpinnings are.

## 1.6. Data Analysis

In specifying the types of rhetorical relations used in the data, two steps are conducted: the first step is the segmentation of the text into spans that will serve as the atomic units of description. In RST these spans have typically been clauses, but certain phrases with propositional content may be considered as well. The spans used in the present analysis are clauses that express single actions. The second step is one of relating these segments in the appropriate rhetorical structure. The current study has used the two aspects of RST specification that can be mapped onto the procedural structure of the process being

expressed, namely, the hierarchical structure of RST and the subset of RST relations that correspond to procedural relations.

#### 1.6.1. Rhetorical Relations Identified

Nine types of rhetorical relations are identified in the data, each of which defines the organization of every instruction. The first and most frequent types are those of *Sequence* which obtains in (11) spans (i.e. 25 %), *Circumstance* which obtains in (10) spans (i.e. 22.7 %), and *Condition* identified in (9) spans (i.e. 20.4 %). The second recurrent rhetorical relations are *Purpose* identified in (6) spans (i.e. 18.6 %) and *Concession* identified in (3) spans (i.e. 6.1 %). The least frequent rhetorical relations in the data are those of *Evidence* identified in (2) spans (i.e. 4.0 %), *Justify, Otherwise* and *Non-Volitional Result* which are identified in (1) span (i.e. 2.0 %). These results are summarized in table (2) below

Rhetorical Relation	Frequency	0/0
Sequence	11	25
Circumstance	10	22.7
Condition	9	20.4
Purpose	6	13.6
Concession	3	6.8
Evidence	2	4.5
Justify	1	2.2
Otherwise	1	2.2
Non-volitional Result	1	2.2
Totals	44	99.6

Table No.2 Types of Rhetorical Relations identified.

#### **1.6.1.1 Informational Relations**

Eight texts are structured around these rhetorical relations: *Condition, Sequence, Circumstance, Purpose, Otherwise and non-Volitional Result.* These relations are called Subject Matter or Informational (Semantic) relations. The basic intention of Informational relations is that to make the reader recognize that there is an ideational meaning relation between the two text spans. These relations are pragmatically uncomplicated and can be analyzed by a truth-conditional semantics.

Examples and Comments on the Informational Relations					
Relation Name	Text No.	Nuclear part	Satellite part	Locus of Effect	The Effect
SEQUENCE	8	First the wound should be firmly pressed with the thumbs,		Nucleus	Reader recognizes the succession
		fingers or palm of the hand. Secondly the wound should be covered with a piece of sterile material			relationship between the nuclei
	9	Cut the bananas lengthways and lay in dish. Sprinkle the sugar on top, then add lemon juice and water			
Circumstance	1	Look round	before you move off		Reader recognizes
	3	ready to slow down or stop		Nucleus+	that the situation presented in S
	2	leave enough space in front of you for an overtaking	ZEBRA CROSSING When following a vehicle of the open road	Satellite	provides the framework for interpreting N.

•					
CONDITION	2,b	Never cross a single continuous or broken white line along the middle of the road	see that the road well ahead is clear		Reader recognizes how the situation presented in N depends on
	6,b	Elixir,	allergic reaction to Elixir.	Nucleus+ Satellite	the realization of that presented in S
PURPOSE	4	Turn the nuts in the opposite direction	For nuts that have no mark		Reader recognizes that the activity in N is
	8		So that the patient is not hurt too much		initiated in order to realize S.
OTHERWISE	7	please keep your luggage with you at all times	attended	Nucleus+ Satellite	Reader recognizes the dependency relation of prevention between the realization of the situation presented in N and the realization of the situation
					presented in S.

NON_ VOLITIONAL RESULT	6.a	it contains gestodence	-	Nucleus+ Satellite	Reader recognizes that the situation presented in N could have caused the situation presented in S.
------------------------------	-----	---------------------------	---	-----------------------	---

Table No.3 The Rhetorical Analysis of Instructional Texts.

#### 1.6.1.2. Presentational Relations

Five texts are structured around these rhetorical relations: *Concession, Evidence* and *Justify*. These relations are called Presentational (pragmatic) relations. The basic intention of presentational relations is to increase some inclination in the reader. This means that these relations are pragmatically complicated, not only limited to mere reader recognition. The relations are of particular interest from a Speech Act Theory perspective. Since there is a one-to-one mapping between the rhetorical relation and the intention of the text, the current analysis identifies three presentational relations:

Examples and Comments on the Presentational Relations						
Relation Name	Text No.	Nuclear part	Satellite part	Locus of Effect	The Effect	
CONCESSION	1 6,d	You should not stop taking Elixir	Even though you have looked in your mirror.  Even though you might experience some mild-effects	Nucleus	Reader 'positive regard for the situation presented in N is increased through recognition of the compatibility of situations presented in N and S.	
EVIDENCE	6,b	Do not use Elixir	If you have had an allergic reaction to Elixir. An allergic reaction may be recognized as a rash, itching ,or shortness of breath.	Nucleus	R's belief in N is increased.	
JUSTIFY	3.a	always be ready to slow down or stop	So as to give way to pedestrians; they love the right of way on these crossings	Nucleus	R's readiness to accept W's right to present N is increased	

**Table No.4 The Rhetorical Analysis of Instructional Texts.** 

#### 1.7. Conclusion

This paper has addressed the issue of using rhetorical relations in planning an instructional text. It takes the view that the planning of the instructional text must be a 2-stage process: selecting its semantic content, then its rhetorical structure. It thus becomes necessary to have linguistically motivated guidelines on how to organize a text's content, i. e., how to map a semantic representation onto the most appropriate rhetorical structure. The current study has emphasized the results of the second stage. It concludes that expressing rhetorical relations in instructional text is of unquestionable importance to the broad goal of generating instructions. Rhetorical structures add new dimensions to the meaning of instructional texts, making them interesting and understandable by many readers.

#### **Notes**

1. Concurrence relation is a simple extension of sequence, referring to actions that are distinct but simultaneous.

## **Appendix**

## **Text No (1) Moving off**

- 2-1. *Circumstance* Before you move off (1), look round (2), even though you may
- 3-2. *Concession* have looked in your mirror (3), to see that no one is about to
- 4-2. Purpose overtake you (4). Give the proper signal (5) before moving out
- 6-5. *Circumstance* (6), and only move off (7) when you can do so safely and
- 8-7. Condition without inconvenience to other road users (8).

# Text No (2) Driving along

- 2-1. *Condition* a. Keep well to the left (1), except when you intend to overtake or turn right (2)
- 2-1. *Condition* b. Never cross a single continuous or broken white line along the middle of the road (1), unless you can see that the road well ahead is clear (2).
- 2-1 *Circumstances* c.When following a vehicle on the open road (1), leave enough space in front of you for an overtaking vehicle (2).

# Text No (3) The safety of pedestrians

- 2-1 Circumstances a.. When approaching ZEBRA CROSSING
- (1) always be ready to 3-2. *Purpose* slow down or stop(2) so as to give way to pedestrians (3);they
- 4-3. *Justify* have the right of way on these crossings (4).
- 3-2. *Circumstances* b. At pedestrian crossings controlled by light signals or by the police (1), give way to pedestrians who are crossing (2) when the signal to move is given (3).
- 2-1. *Circumstance* c. When turning at a road junction, give way to pedestrians who are crossing (2).

## **Text No (4) Loosening the Wheel Nuts**

- a. Do not remove the nuts completely.
- 2-1.purpose b. Use a cross bar (1) to loosen the nuts of the wheel (2).
- 2-1. *Condition* c. If the nuts have an "L" mark (1), you must unscrew them clockwise (2).
- 2-1. Purpose d. For nuts that have no mark (1), turn the nuts in the opposite direction (2).

# Text No (5) How to use Dulux New Super Paint, Painting Furniture

Sequence First, remove as much of the old paint as you can with paint remover

- 3-1, 5-3, 6-5. or a paint scraper (1). Then rub the surface to be painted with *Circumstance*. sandpaper (2) until it is smooth (3) Next clean the piece of
- 3-2, 5-4, 8-7. furniture with a soft cloth (4) until all the dust and dirt are removed (5). Finally, apply the first coat of DULUX NEN SUPER

PAINT (6). When this is dry (7) apply a second coat (8).

## Text No (6) Administer Medicine

- 2-1. Concession a. Although Elixir has no serious side effects (1), it
- 3-2. Non-Volitional contains gestodence (2). Consequently, it provokes a mild

Result allergic reaction (3).

- 2-1. *Condition* b. If you have had an allergic reaction to Elixir (1), do not use
- 3-2-1. *Evidence* Elixir (2). An allergic reaction may be recognized as a rash, itching, or shortness of breath (3).
- 2-1. *Condition* c. Consult your doctor immediately (1), if a rash develops (2).

It might become seriously infected.

- 2-1.Concession d. you should not stop taking Elixir (1), even though you
- 3-2. Evidence might experience some mild effects (2). For example:

feelings of dizziness and nausea are very common at the beginning of treatment (3)

## **Text No (7) Security Notice**

- 2-1. *Purpose* For security reasons (1) please keep your luggage with
- 3-2. *Otherwise* you at all times (2). Any unattended items will be removed by the police without further warnings (3).

## **Text No (8) First Aid, How to Stop Bleeding**

- 2-1. *Sequence* first, the wound should be firmly pressed with the thumbs,
- 3-2. Circumstance fingers or palm of the hand (1). Secondly, the wound should
- 5-4. *Condition* be covered with a piece of sterile material (2) before being
- 6-5. Purpose pressed (3). When there is something in the wound such as a 7-5. *Sequence* piece of glass (4), the thumbs should be pressed on the sides 8-7. *Sequence* of the wound (5) so that the patient is not hurt too much (6).
- 9-10. *Condition* After this pressure (7), a dressing which includes a thick pad of cotton, wool should be placed over the wound and bandaged tightly (8). If blood oozes through (9), the dressing must be left and further pads placed on top and bandaged even more firmly (10).

### Text No (9) Bananas Au Rhum

10z. butter, 20 large bananas, 9 tablespoons Demerara sugarJuice of three lemons,

# 3 tablespoons water, 3 sherry-glass rum, 1 gill double cream

Sequence. Cut the bananas lengthways and lay in dish(1). Sprinkle the

- 2-1, 3-2, 4-3, sugar on top (2),then add lemon juice and water (3).Bake in a
- 5-4, 6-5. moderate oven, gas-mark 4(350 F)for 20 minutes(4)or until brown.

Add the rum5 minutes before removing, (5), serving it in a separate dish (6).

## Text No (10) Warning

3-2. *Condition* Don't stop your vehicle along this road for any reason (1), if you do so (2), you will be engaged with lethal gunfire (3).

#### **References**

Crystal, david (1973) *Investigating English style*. London: Longman

**Group Limited** 

Hoey, Michael (1983) *On the Surface of Discourse*. London: Goerge

Allen and Unwin.

Jordan, M. P. (1984) *Rhetoric of Everyday English Texts*. London: George Allen and Unwin.

\_\_\_\_\_\_(1992)'' An Integrated three-pronged Analysis of a Fund-Raising Letter''. In Mann,W. C. and S. R. Thompson (eds.) (pp. 171-226).

Mann, W. C. and S. R. Thompson (1988) "Rhetorical Structure Theory: Towards a functional theory of Text Organization." Text, 813.

Moore, J. d. and Pollack, M. E. (1992) A Problem for RST: the Need for Multi-Level Discourse Analysis. Computational Linguistics, 18: 537-544.

Soars, John and Liz(2007) *Headway*. Oxford: Oxford University Press.