

## The Illogical Logic in Alice's Adventures in Wonderland

Najah A. Almabrouk

Department Of English Language And Literature  
Istanbul Aydin University,  
Besyol Mah. Inonu Cad. No: 40. 34295 Sefakoy  
Küçükçekmece, Istanbul, Turkey.

### Abstract

*One Property Of Natural Language Is That It Has A Logical Structure. Logic In Linguistics Can Be Perceived As That Hidden Tie Which Links Linguistic Devices To The Semantic Meanings Of Sentences. This Qualitative Descriptive Case Study Tried To Shed Light On The Relation Between Logic And Language, Mainly The Logic-Based Semantic Relation Of Entailment. It Explored Logic-Based Semantics In Literary Texts Particularly Lewis Carroll's Masterpiece Of Alice's Adventures In Wonderland. The Results Showed That Alice's Utterances Alone Were Rich In Entailments With 46 Examples found Across The 12 Chapters Of The Novel. All Of The Entailments Were Of Syntactic Type Following The Four Logical Rules Of Inference: Modus Ponens, Modus Tollens, Hypothetical Syllogism And Disjunctive Syllogism. Through The Use Of Entailment, Carroll Was Able To Produce Three Main Illocutions: Criticizing, Questioning And Emphasizing In Which He Remarkd On Social Values, The Human Nature, Authority, Politics, Physics, Logic And Identity.*

Keywords: Logic, Semantics, Truth Conditions, Entailment, Presupposition, Illocutions, Speech Act Theory, Rules Of Inference

### 1. Introduction

One Property Of Natural Language Is That It Has A Logical Structure. Logic In Linguistics Can Be Perceived As That Hidden Tie That Links Linguistic Devices To The Semantic Meanings Of Sentences. Holding Between Cognition And meanings, It Functions As A Tool To Disambiguate Utterances Through Applying A Set Of Logic Rules (Saeed, 2003). However, Literary Texts Do Not Always Abide By The Rules Of Logic Mostly For Stylistic Purposes Such As The Use Of Irony, Hyperbole, Metaphor And Many More. Violating The Rules Of Logic Leads To A Semantic Gap That May Affect The Meaning of Sentences And Create A Kind Of Linguistic Riddles To Be Resolved By The Reader Through Decoding The Language Via The Application Of Logic. Viewed As A System Of Calculation Rules, Montague (1974) Argues That Logic Can Help Readers To Represent Sentence Meaning (As Cited In Saeed, 2003).

Under The Umbrella Of Semantics, This Study Tried To Shed Light On The Relation Between Logic And Language, Mainly The Semantic Relations That Holds Between Sentences. It Explored logic-Based Semantics In Literary Texts Particularly Lewis Carroll's Masterpiece Of *Alice's Adventures In Wonderland*. This Paper Focused On The Broad Sense Of Logic With Confinement To Truth-Conditional Semantics And Did Not Delve Into More Sophisticated Approaches To Logic Such As Formal Semantics. Thus, This Study Attempted To Answer Two Main Questions: How Did Carroll Use Logic in A Context Of A Fantasy World Of Nonsense? And, What Are The Semantic Implications That Resulted From The Truth-Based Semantic Relations Found In The Novel? On The Basis Of The Study Of Logic, Which Dates Back To The Great Greek Philosopher Aristotle, This Research Paper Adopts The Truth-Based Approach To Meaning Under The Theoretical Framework Of Semantics. The Focus Of This Study Was On One main Truth-Based Semantic Relation: Entailment. Thus, Brief Introductions To Logic, Truth, Entailment And Presupposition, Which Is Related To Entailment, Are Given Below.

### 2. Literature Review

#### 2.1 Logic And Truth

Saeed (2003) Provided A Good Explanation To The Notion Of Logic Claiming That Logic Is About Finding The Principals Of Valid Argument And Inference. He Used An Example Of Aristotle's modus Ponens Rule Which Is A Three-Step Argument When The Truth Of A Given Proposition Is Derived From The Truth Of Two Previous Dependent Propositions Such As In The Following Example:

If John Has Been Rewarded, Then He Has Won The Game  
John Has Been Rewarded  
 John Has Won The Game

If The Two Propositions Over The Line (Called The Premises) Are True Then The Proposition Under The Line (Called The Conclusion) Is Also True. There Are Three Other Rules Of Valid Inference: Modus Tollens, The Hypothetical Syllogism And The Disjunctive Syllogism (Saeed, 2003).

The Modus Tollens Rule Implies That If The Second Proposition Of The First Premise Is Negated Then The First Proposition Of The Premise would Also Be Negated Which Means That If The Second Proposition Is Untrue Then The First One Is Also False.

If John Has Been Rewarded, Then He Has Won The Game  
John Has Not Won The Game  
 John Has Not Been Rewarded

The Hypothetical Syllogism Rule Includes A New Conditional statement In The Second Premise and Thus The Conclusion Will Also Entail The Truth Of The Added Hypothetical Proposition Along With The First Proposition Of The First Premise As In The Example Below:

If John Has Been Rewarded, Then He Has Won The Game  
If John Has Won The Game, Then He Is Happy  
 If John Has Been Rewarded, Then He Is Happy

The Last Rule Of Inference, Disjunctive Syllogism, Is About The Truth Of Either The First Proposition Of The First premise Or The Second Part Of The First Premise. With The Use Of Preposition *Or* A Conditional Statement Is Used In The Premise. It Suggests That When The Second Premise is Negated Then The Conclusion Will Point To The Truth Of The Second Proposition Of The First Premise only As In The Following Example:

John Is At School Or He Is At Home  
John Is Not At School  
 John Is At Home

Saeed (2003) Opines That In Order To Determine The Truth Of Sentences One Has To Have Two Types Of Knowledge. The First Is Contextual Facts About The Speaker Or The Names And Objects Involved In The Utterance And The Second Is Scientific Facts About The Universe. Whether A Sentence Is True Or False Is Called Its Truth Value; It Can Be Assigned By The Sentence's Truth Conditions, Which Are The Facts Obtained From Reality: Either Contextual Or Scientific (Saeed, 2003). To Show That The Truth Relationships That Hold Between Sentences Apply To Any Kind Of Sentences Semanticists Came Up With A Logical Notation Of A Developed Formula To Represent Propositions Unambiguously (Hurford Et Al., 2007). The Notation Includes Symbols (Like & Which Stands For *And*, V For *Or*, And ~ For *Not*) For Building Up Logical Formulas Where A Lower-Case Letter (P, Q, R, Etc.) Stands For Different Propositions (Saeed, 2003). If A Proposition Is Affirmative Then It Is Represented By **P** And If It Is Negative It Is Represented By **~P**. Truth Tables Are Used By Logicians To Indicate The Relations Between Propositions. When A Proposition Is True Then Its Truth Value Is Represented By The Letter T And When It Is False Then Its Truth Value Is Represented By F. This Is Elaborated In The Following Example:

- a. John Has Won The Game ( Proposition P)
- b. John Has Not Won The Game (Proposition ~Q)

A Truth Table Can Be Formed For These Two Sentences And It Would Be Read As When Proposition **P** Is True (T) Then Proposition **Q** Is False (F) And, Vice Versa, When **P** Is False (F) Then **~Q** Is True (T). Below Is The Truth Table For The Above Example:

<u>P</u>	<u>~Q</u>
T	F
F	T

A Number Of Connectives Such As *And* and *or* Are So Significant In The Study Of Logic Due To Their Predictable Effect On The Truth Conditions Of Compound Statements; This Is Because The Truth Value Of A Compound Statement Can Be Predicted From The Truth Of The Constituent Statements (Hurford Et Al., 2007). A Truth Table For Connective *and* is Given Below:

P	Q	(P ^ Q)
T	T	T
T	F	F
F	T	F
F	F	F

There Are Two Kinds Of Logical Connective *Or*: The Inclusive Or And The Exclusive Or. The Inclusive Or Is Common In Sentences Such As I Will Give My Friend A Book Or A Magazine. The Truth Table For The Inclusive Or Is Provided Below:

P	Q	(P V q)
T	T	T
T	F	T
F	T	T
F	F	F

However, The Exclusive Or Which Is Symbolized By **Ve** can Be Seen In Sentences Such As In The Sentence You Will Do The Homework Or You Will Be Punished. In This Example If Both Propositions Are True The Compound Statement With Or Cannot Be True Because The Sentence Has An Implication That (But Not Both: Doing The Homework And Being Punished) (Saeed, 2003). Therefore If One Does The Homework It Will Be Illogical And Unfair To Get Punished While He Or She Has Fulfilled The Duty Being Asked To Do. This Connective Has A Different Truth Table:

P	Q	(P Ve q)
T	T	F
T	F	T
F	T	T
F	F	F

Another Connective Is Called Material Implication And Symbolized As  $\rightarrow$ . It Can Be Found In Conditional Sentences As If It Rains, I Will Visit My Friend. The Sentence Can Be Only False If **P** Is T And **Q** Is F. If **P** Is F And **Q** Is T Then The Compound Statement Is T Because **P** Is A Sufficient Truth Condition For **Q** But Not A Necessary Condition. It Has The Following Truth Table:

P	Q	(P $\rightarrow$ Q)
T	T	T
T	F	F
F	T	T
F	F	T

There Is Also A Related Connective Called Biconditional, Symbolized By  $\equiv$ . The Biconditional Reflects A Statement Where The Sentence Is True If And Only If Both Of **P** And **Q** Are Either True Or False Because **P** Is A Necessary Condition For **Q**. This Means That **P** Is T If And Only If **Q** Is T And This Relation Can Be Abbreviated As **Piffq**. It Can Be Illustrated In Sentences Such As I Will Leave My Country If And Only If I Am Obligated To. It Has The Following Truth:

P	Q	(P $\equiv$ Q)
T	T	T
T	F	F
F	T	F
F	F	T

Thus The Abovementioned Four Valid Inference Rules Have The Following Representations: Modus Ponens:  $\frac{P \rightarrow Q, P}{Q}$ ,

Modus Tollens:  $\frac{P \rightarrow Q, \sim Q}{\sim P}$ , Hypothetical Syllogism:  $\frac{P \rightarrow Q, Q \rightarrow R}{P \rightarrow R}$ , And Disjunctive Syllogism:  $\frac{P \vee Q, \sim P}{Q}$ .

Given That, It Can Be Concluded That Sentences Have Truth Values Where Truth Is Of Different Types. The Types Include Empirical Truth Which Depends On Reality And The Knowledge Of The World And Necessary Truth Such As In Tautologies Where Sentences Are Always True In Their Literal Meanings. However, Tautologies Cannot Be Denied Unless A Contradiction Is Forced. Contradiction Occurs When Two Sentences Are Opposite Or Contradictory To Each Other. Like Necessary Truth, Analyticity Is Another Type Of Truth Where The Truth Is Derived From The Meaning Relations In The Sentence Disregard the Knowledge About The World (Saeed, 2003).

He Also Elaborated That In Comparison To Analytic Statements, Synthetic Statements Are True But Not Necessary True Because They Depend On The Facts Of The World In Given Situations.

## 2.2 Entailment And Presupposition

Entailments And Presupposition Are Two Related Semantic Relations. Entailment Is So Important For The Theories Of Meanings About Sentence Relations (Lyons, 1995). It Is A Semantic Relation Between Sentences Whereby The Truth Of A Certain Sentence Necessary Follows From The Truth Of The Preceding Sentence (Crystal, 1998). In Other Words, A Sentence **P** Entails Sentence **Q** When The Truth Of The First **P** Guarantees The Truth Of The Second **Q**, And The Falsity Of The Second **Q** Guarantees The Falsity Of The First **P** (Saeed, 2003). This Can Be Clarified By This Example:

The Policeman Killed The Criminal.  
The Criminal Died.

The Truth Table For Entailment Then Is Represented By The Following:

P	Q
T	→ T
F	→ T Or F
F	← F
T Or F	← T

The Semantic Relation Of Entailment Can Be Deducted Without Checking Any Fact Of The World, Rather It Depends On The Linguistic Structure Or The Lexicon As The Source Can Be Lexical Or Syntactic (Saeed, 2003). For Example, Lexical Relationships Such As Hyponymy Is A Common Source Of Lexical Entailment. Syntactic Entailment However Derives From Active And Passive Forms Of The Same Sentence Resulting In Paraphrases Which Are Sentences That Mutually Entail Each Other (Finch, 2000). Entailment Also Can Be Generated By Sentence Relations Of Synonymy When Two Sentences Entail Each Other And Contradiction Which Can Be Formed By Negation Or Lexical Relations Such As Antinomy. Presupposition On The Other Hand Is Another Semantic Relation Which Is Mainly About Making Assumptions And It Is Related To The Speaker's Meaning (Saeed, 2003). The Study Argues That There Are Two Approaches To Presupposition One Is Semantic Where Sentences Are Viewed As External Objects And The Meaning Is An Attribute To Sentences. In Other Words, Semantic Presupposition Is Related To The Conventional Meaning Of Words. The Second Is A Pragmatic Approach To Presupposition Where Sentences Are Dealt With As Utterances Of Individuals In A Context Of Communication. It Is Viewed As The Speaker's Actions (Indarti, 2015). Below Is An Example Of Presupposition:

John's Sister Has Got Married  
John Has A Sister

The First Sentence Presupposes The Second Sentence As The Meaning Of *John Has A Sister* Can Be Assumed From The Background Meaning Of *John's Sister Has Got Married*. Because This Paper Is Interested In The Semantic Presupposition, The Truth Table For The Semantic Presupposition Only Is Given Below:

P	Q
T	→ T
F	→ T
T Or F	← T

In Sum, Entailment Is A Logical Implication Relation That Holds Between Propositions **P** And **Q** Such That Whenever **P** Is True, **Q** Is Also True. However, Presupposition Is A Pragmatic Relation That Holds Between The Speaker And The Proposition (Tember & Frank, 2013). Past Studies Such As Jafar (2008) Explored The Notion Of Entailment And The Relation Between Entailment And Hyponymy. It Also Discussed presupposition And Shed Light On The Difference Between Presupposition, Entailment, Synonymy And Supposition. The Objective Of The Study Was To Assess Whether Iraqi EFL University Students Were Able To Recognize entailment And Presupposition And To Identify The Points Of Difficulty They Encountered In Using Entailment And Presupposition As Well As To Find Out

The Reasons Of And Solutions For Students' Errors. The Results Of The Experimental Study Showed That Most Iraqi EFL University Students Were Unable To Differentiate Between Entailment And Presupposition. This Actually Proves That A Clear-Cut Distinction Between The Two Semantic Relations Is Not Easy. To Solve This Problem, Saeed (2009) Suggested A Negation Test And Argues That Entailments Fail The Negation Test While Presuppositions Survive The Test (As Cited In Indarti, 2015).

This Means That If The Entailing Sentence Is Negated, The Entailed Sentence Becomes False While If The Presupposing Sentence Is Negated, The Presupposed Sentence Will Remain True. Indarti (2015) Conducted A Study In Which He Discussed Entailment And Presupposition Under The Negation Test. The Researcher Tested Pairs Of Utterances In *Garfield The Cat* Comic Strips. The Qualitative Descriptive Study Aimed At Showing The Difference Between The Two Semantic Relations Using A Negation Test. The Result Of The Study Proved The Efficiency Of The Negation Test. The Study Concluded That The Difficulty Of Distinguishing Entailment And Presupposition Can Be Successfully Solved By The Negation Test. The Current Study However Explored The Use Of The Logic-Based Semantic Relation Of Entailment In *Alice's Adventures In Wonderland*. It Aimed At Finding Out How Logic Was Used In The Novel Despite The Fact That Most Of Its Events And Utterances Seem Illogical As They Take Place In An Imaginary World. In Other Words, It Tried To Determine Whether Carroll Followed The Four Logic-Based Rules Of Inference And Whether They Were Valid Or Invalid. Moreover, It Also Sought To Explore The Semantic Implications That Result From The Use Of Logic In An Apparently Illogical Context.

### **3. Methodology**

#### **3.1. Research Design And Material Selection**

This Research Is A Qualitative Descriptive Case Study That Semantically Analyzed The Well-Known Novel Of *Lewis Carroll: Alice's Adventures In Wonderland*. This Novel Was Particularly Selected Because It Is Famous For Nonsense And Follows A Different System Of Logic Where Events Take Place In A Fantasy Illogical World And Actions Do Not Follow The Natural Reasoning Of Normal Life Being So Far From Reality; And, Because It Was Written By A Logician And A Mathematician, Charles Lutwidge Dodgson Who Is Known By His Pen Name Lewis Carroll, Which Makes It A Good Discourse For Logic-Based Semantic Analysis.

#### **3.2. Data Analysis**

This Paper Adopted Semantic Discourse Analysis. Dijk (1985) Argues That Semantic Discourse Analysis Has An Extensional Or Referential Dimension That Seeks The Knowledge On The References Of Sequences Of Sentences In A Discourse. He Opined That Logic Identified The Sentence Reference With A Truth Value (Whether True Or False), Claiming That Truth Values Are Also Assigned To Compound Propositions Based On The Meanings Of The Connectives Between Them. Thus, Discourse Semantics Determine The Rules That Assign A Truth Value To The Whole Discourse On The Basis Of The Truth Values Of Individual Sentences Dijk (1985). Given That, This Research Followed Semantic Discourse Analysis To Study The Truth-Based Semantic Relation: Entailment. Seven Procedures Were Pursued In This Paper In Order To Analyze The Novel Semantically. First, The Novel Was Read Thoroughly And Utterances Were Identified. Second, Utterances Were Filtered And The Ones That Included Entailment Were Determined. This Was Done By Searching For Conditional Sentences As Well As Other Affirmative Or Negative Sentences That Contained Words Like *Must*, *Then* And *When*. Other Utterances That Included Some Kind Of Questions Were Also Selected For Analysis After Being Converted To The Form Of Conditional Sentences. Third, Alice's Utterances Alone Were Selected For Data Analysis Due To The Large Text Of The Novel. In Order To Distinguish Entailments From Presuppositions, The Negation Test Was Applied. Fourth, The Selected Utterances Were Analyzed With Accordance To Logic-Based Semantics Under The Framework Of Semantic Discourse Analysis. Fifth, The Analyzed Utterances Were Classified Whether They Contain Valid Or Invalid Arguments Based On The Four Valid Inference Rules: Modus Ponens, Modus Tollens, Hypothetical Syllogism And Disjunctive Syllogism. Sixth, The Semantic Implications That Resulted From The Analyzed Utterances Were Identified Based On The Illocutions Performed In The Utterances. This Was Done By Adopting The Framework Of The Pragmatic Speech Act Theory By John Austin Who Claims That Utterances Perform Actions Or What He Called Illocutions (As Cited In Hiani, 2015). Finally, The Seventh Step Was Identifying The Type Of Entailment Whether Syntactic Or Lexical.

### **4. Results**

The Results Of This Study Were Reached By Following The Above Mentioned Seven Procedures. Semantic Discourse Analysis Of Alice's Utterances In The Great Fantasy Novel Of *Alice's Adventures In Wonderland* Showed That The Selected Utterances Were Rich In Logic-Based Semantic Relations: Particularly Entailment. A Total Of 46 Utterances That Included Entailment Were Found Across The 12 Chapters Of The Novel. All Of The Entailments Found In The Text Were Of The Syntactic Type And Followed The Four Logical Rules Of Inference: Modus Ponens, Modus Tollens, Hypothetical Syllogism And Disjunctive Syllogism. Modus Ponens Was Used In 21 Entailments; Hypothetical

Syllogism Was Used In 12 Entailments; Modus Tollens Was Used In 7 Entailments, And Disjunctive Syllogism Was Used In 6 Entailments. The Results Of The Analyzed Utterances Were Distributed To Four Tables Attached Below And Categorized Based On The Four Inference Rules.

Table 1 Shows That 14 Out Of 21 Modus Ponens Entailments Were Logically Formed By Valid Arguments And That The Remaining 7 Entailments Were Logically Invalid. Whether The Arguments Were Valid Or Invalid Had No Significant Impact On The Semantic Implications Of Utterances. In Other Words, Valid And Invalid Arguments Both Carried Meanings And Conveyed Messages To The Reader. The Only Difference Was That The Truth Values Of Valid Arguments Were Always True And That The Truth Values Of Invalid Arguments Were Always False. The Semantic Implications That Resulted From Modus Ponens Entailments Are Listed In The Table.

Table 2 Shows That All Hypothetical Syllogism Entailments Were Logically Formed By Valid Arguments. The Semantic Implications That Resulted From Hypothetical Syllogism Entailments Are Given In The Table.

Table 3 Shows That All Modus Tollens Entailments Were Logically Formed By Valid Arguments. The Semantic Implications That Resulted From Modus Tollens Entailments Are Included In The Table.

Table 4 Shows That Five Out Of Six Disjunctive Syllogism Entailments Were Logically Formed By Valid Arguments. Whether The Arguments Were Valid Or Invalid Had No Significant Impact On The Semantic Implications Of Utterances. In Other Words, Valid And Invalid Arguments Both Carried Meanings And Conveyed Messages To The Reader. The Only Difference Was That The Truth Values Of Valid Arguments Were Always True And That The Truth Values Of Invalid Arguments Were Always False. The Semantic Implications That Resulted From Hypothetical Syllogism Entailments Are Shown In The Table.

## 5. Discussion

The Results Showed That The Analyzed Utterances Of The Novel Contained Truth-Based Semantic Relations: Mainly Syntactic Entailment. The Entailments That Were Found In The Novel Were Logically Formed In Consistence With The Four Logic Rules Of Inference: Modus Ponens, Modus Tollens, Hypothetical Syllogism And Disjunctive Syllogism. Most Of The Logical Arguments That Were Used To Build Up The Entailments Were Valid Arguments. This Means That The Truth Values Of Most Of The Arguments Were True As 39 Out Of 46 Entailments Were Logically Formed By Valid Rules Of Inference. After Applying Semantic Discourse Analysis On The Text Of The Masterpiece Of Art: *Alice's Adventures Of Wonderland*, It Turned Out That Entailment Is So Important To Logic Such That It Can Function As A Tool To Build Up And Create Logical Arguments Out Of Imagination And Hypothetical Situations That Exist In A Virtual Fantasy World. Even Though Such A World Does Not Contain Real Actions Or Events And Is Far From Reality, Logic Still Can Be Applied To End Up With Scenarios With Its Own Made-Up Rules Of Logic Within A Different Reasoning System. Out Of This Creative Methodology To Draw Pictures And Images Of A World Created By The Imagination Of A Little Child, Carroll Could Convey Certain Messages To The Reader By The Semantic Implications That Resulted From His Use Of The Logic-Based Semantic Relation Of Entailment Found In Alice's Utterances In The Novel. According To The Speech Act Theory Which Was Proposed By Austin (1962) As Cited In Hiani (2015), Utterances Can Perform Actions Through Three Main Acts. First, Locutionary Act, Which Is The Lateral Meaning Of An Utterance. Second, Illocutionary Act, Which Is The Intention Of The Speaker In Making The Utterance (Saeed 2003). Third, Perlocutionary Act, Which Is The Effect Of The Speaker's Utterance On The Hearer. Through The Use Of Entailment Carroll Was Able To Produce Three Main Illocutions: Criticizing, Questioning And Emphasizing. In 27 Entailments, Carroll Performed The Speech Act Of Criticizing In Which He Criticized The Old Style Of Writing Books Without Pictures. He Also Criticized The Human Nature, Authority, Politics, And Social Values As Well As Human Capabilities For Comprehending Language And Logic. He Performed The Act Of Emphasizing In 11 Entailments Where He Emphasized The Importance Of Sciences Such As Logic And Mathematics In Addition To Social Values And Rights Such As Silence, Objection And Freedom Of Speech. He Also Emphasized The Importance Of The Question Of How As Well As The Importance Of Zero In Mathematics. In Addition, He Emphasized The Relation Between Feelings And Body Changes. An Interesting Result Was That Carroll Highlighted Not Only The Importance But Also The Unimportance Of Some Values Or Human Practices Such As Wishes And The "Perfect Size" As Long As It Fits. The Third Speech Act That Was Performed By Carroll Is Questioning. It Was Found In 8 Entailments Which He Used To Question Identity Based On Body Changes, Beauty And Education. He Also Questioned Physics And Meanings Of Words Such As In The Utterance *Do Cats Eat Bats? Or Do Bats Eat Cats?*

However, Further Research Is Urged For Exploring Entailment And Presupposition Together In The Utterances Of All Of The Characters In The Novel Not Only Alice's. This Is Important Especially That The Other Characters Are Made Up By The Imagination Of Alice And Thus Being Unreal Makes Their Utterances A Good Source For More Illogical, Or Rather Logical, Arguments.

**References**

Carroll, L., & In Gardner, M. (2004). *The Annotated Alice: The Definitive Edition*, Marten Gardner (Ed.) New York: Norton.

Crystal, D. (1998). *A Dictionary Of Linguistics And Phonetics*. Oxford: Blackwell Publisher Ltd.

Dijk, T. A. V. (1985). *Semantic Discourse Analysis*. *Handbook Of Discourse Analysis* (2) 103-136.

Finch, G. (2000). *Linguistic Terms And Concepts*. London: Macmillan Press LTD.

Hiani, K. (2015). *Performing Speech Acts Among Moroccan EFL Advanced Learners*. *Procedia- Social And Behavioral Sciences*, (199) 479 –485.

Hurford Et.Al. (2007). *Semantics: A Coursebook*. Cambridge: Cambridge University Press.

Indarti, G. A. (2015). *Distinguishing Entailment And Presupposition Under Negation Test*. *Language And Language Teaching Journal*, 18(01), 27-38. Doi:10.24071/Lt.2015.180104.

Ja’far, A. A. (2008). *Entailment And Presupposition*. Babylon University.

Lyons, J. (1995). *Linguistic Semantics: An Introduction*. Cambridge: Cambridge University Press.

Saeed, J. (2003). *Semantics* (2nd Ed). Blackwell Publishers, Malden, Mass.

Tremper, G, & Frank, A. (2013). *A Discriminative Analysis Of Fine-Grained Semantic Relations Including Presupposition: Annotation And Classification*. *Dialogue & Discourse*, 4 (2).

**Appendix**

**Table 1 Modus Ponens Entailments**

No. And Page	Utterance	Analysis	Form ula	Rule	Validit y	Semantic Implications	Type
1. (P.14)	What Is The Use Of A Book Without Pics Or Conversation?	If A Book Has No Pictures Or Conversations, Then It Is Of No Use.	$\frac{P Q}{P}$ $Q$	Modus Ponens	Valid	Criticizing How Books Used To Be Written (Without Pictures)	Syntactic
2 (P.14)	I Wonder How Many Miles I’ve Fallen This Time? I Must Be Getting Somewhere Near The Center Of The Earth.	If I Have Fallen That Long, Then I Must Be Near The Center Of The Earth.	$\frac{P Q}{P}$ $Q$	Modus Ponens	Valid	Questioning Physics	Syntactic
3 (P.14)	If I Shall Fall Right Through The Earth, How Funny It’ll Seem...	If I Fall Right Through The Earth, Then It Will Be Funny.	$\frac{P Q}{P}$ $Q$	Modus Ponens	Valid	Criticizing Physics Through Humor	Syntactic
4 (P.15)	Dinah, My Dear, I Wish... You Might Catch A Bat.	If Dinah Is Hear, Then It Might Catch A Bat	$\frac{P Q}{\sim P}$ $\sim Q$	Modus Ponens	Invalid	Emphasizing That Wishes Are Of No Use	Syntactic
5 (P.16)	What A Curious Feeling! ...I Must Be Shutting Up Like A Telescope.	If I Am Feeling Like That, Then I Must Be Shutting Up Like A Telescope.	$\frac{P Q}{P}$ $Q$	Modus Ponens	Valid	Emphasizing The Relation Between Feelings And Body Changes	Syntactic
6 (P.16)	Well, I’ll Eat It, And If It Makes Me Grow	If I Eat It, It Will Make Me Grow Larger	$\frac{P Q}{P}$ $Q$	Modus Ponens	Valid	Emphasizing That Size Doesn’t Matter	Syntactic

	Larger... I Can Creep Under The Door.	Or Smaller, Which Both Are Useful.				As Long As It Fits.	
<b>7</b> <b>(P.17)</b>	...I Must Have Been Changed For Mabel	If I Couldn't Answer Math, Then I Am Must Have Changed To Mable	$\frac{P Q}{P}$ $Q$	Modus Ponens	Valid	Questioning Identity (Based On Knowledge)	Syntactic
<b>8</b> <b>(P.17)</b>	How Can I Have Done That? I Must Be Growing Small Again.	If I Could Wear Rabbit's Gloves, Then I Must Be Growing Small Again.	$\frac{P Q}{P}$ $Q$	Modus Ponens	Valid	Criticizing Human Nature (Body Changes)	Syntactic
<b>9</b> <b>(P.18)</b>	...For I Never Was So Small As This Before...I Declare It's Too Bad.	If I Am So Small, Then It Is Too Bad	$\frac{P Q}{P}$ $Q$	Modus Ponens	Valid	Criticizing Social Values (Being Small Is Bad)	Syntactic
<b>10</b> <b>(P.18)</b>	Would It Be Of Any Use...To Speak To This Mouse? Everything Is So Out-Of-The-Way Down Here, That I Should Think Very Likely It Can Talk	If Being Strange Is Normal In Wonderland, (And Speaking To A Mouse Is Strange), Then Speaking To A Mouse Is Normal	$\frac{P Q}{P}$ $Q$	Modus Ponens	Valid	Criticizing Social Values (What Is Strange)	Syntactic
<b>11</b> <b>(P.21)</b>	I Wish I Had Our Dinah Here...She'd Soon Fetch It Back!	If Dinah Is Here, Then She'll Fetch The Mouse Back.	$\frac{P Q}{\sim P}$ $\sim Q$	Modus Ponens	Invalid	Emphasizing That Wishes Are Of No Use	Syntactic
<b>12</b> <b>(P.21)</b>	How Surprised He'll Be When He Finds Out Who I Am!	If He Knows Who I Am, Then He Will Be Surprised	$\frac{P Q}{\sim P}$ $\sim Q$	Modus Ponens	Invalid	Criticizing Pride On Identity	Syntactic
<b>13</b> <b>(P.22)</b>	Only I Don't Think, That They'd Let Dinah Stop In The House If It Began Ordering People About Like That!	If Dinah Began Ordering People About Like That, Then They Wouldn't Let Dinah Stop In The House	$\frac{P Q}{\sim P}$ $\sim Q$	Modus Ponens	Invalid	Criticizing Authority And Power (Relation Between The Strong The Weak, People And Government)	Syntactic
<b>14</b> <b>(P.24)</b>	I Should Have Liked Teaching It Tricks Very Much, If—If I'd Only Been The Right Size To Do It!	If I Had Been The Right Size (Big Size), Then I Should Have Liked Teaching The Puppy Some Tricks.	$\frac{P Q}{\sim P}$ $\sim Q$	Modus Ponens	Invalid	Criticizing Social Values (People Of Big Size Has Power Over Those Of Small Size)	Syntactic



<b>15</b> <b>(P.30)</b>	If You're Going To Turn Into A Pig, My Dear, I'll Have Nothing More To Do With You	If You're Going To Turn Into A Pig, Then I'll Have Nothing More To Do With You	$\frac{P \ Q}{P}$ $Q$	Modus Ponens	Valid	Criticizing The Human Nature (The Animal Aspect Of Humans)	Syntactic
<b>16</b> <b>(P.31)</b>	If There Is Not Any Wine, Then It Wasn't Very Civil Of You To Offer It	If There Is No Wine, It Wasn't Not Civil To Offer It	$\frac{P \ Q}{P}$ $Q$	Modus Ponens	Valid	Criticizing The Human Nature (Etiquette )	Syntactic
<b>17</b> <b>(P.34)</b>	...I've Had Nothing Yet, So I Can't Take More."...	If I Had Nothing Yet, Then I Cannot Take More	$\frac{P \ Q}{P}$ $Q$	Modus Ponens	Valid	Emphasizing The Importance Of Zero In Mathematics	Syntactic
<b>18</b> <b>(P.39)</b>	I Don't See How He Can Ever Finish, If He Doesn't Begin.	If He Doesn't Begin, Then He Cannot Finish	$\frac{P \ Q}{P}$ $Q$	Modus Ponens	Valid	Emphasizing The Importance Of Logic	Syntactic
<b>19</b> <b>(P.39)</b>	I Think I Should Understand That Better, If I Had It Written Down	If I Had It Written Down, Then I Should Understand That Better	$\frac{P \ Q}{\sim P}$ $\sim Q$	Modus Ponens	Invalid	Criticizing Human Capability To Comprehend Logic And Language.	Syntactic
<b>20</b> <b>(P.42)</b>	If I'd Been The Whiting, I'd Have Said To The Porpoise 'Keep Back, Please!	If I'd Been The Whiting, Then I'd Have Said To The Porpoise...'Keep Back, Please!	$\frac{P \ Q}{\sim P}$ $\sim Q$	Modus Ponens	Invalid	Emphasizing The Importance Of Objection And Expressing One's Opinion Freely	Syntactic
<b>21</b> <b>(P.47)</b>	... Then It Ought To Be Number One.	If It's The Oldest Rule In The Book, Then It Ought To Be Number One	$\frac{P \ Q}{P}$ $Q$	Modus Ponens	Valid	Emphasizing The Importance Of Logic And Mathematics	Syntactic

**Table 2 Hypothetical Syllogism Entailments**

No. And Page	Utterance	Analysis	Formula	Rule	Validity	Semantic Implications	Type
<b>1</b> <b>(P.16)</b>	If It Makes Me Grow Larger, I Can Reach The Key	If It Makes Me Larger, Then I'll Reach The Key If I'll Reach The Key I'll Open The Door	$\frac{P \rightarrow Q}{Q \rightarrow R}$ $P \rightarrow R$	Hypothetical Syllogism	Valid	Criticizing The Famous Saying "The End Justifies The Means"	Syntactic

<b>2</b> <b>(P.16)</b>	If It Makes Me Grow Smaller, I Can Creep Under The Door	If It Makes Me Smaller, I'll Creep Under The Door If I'll Creep Under The Door, I'll Get Into The Garden	$P \rightarrow Q$ $Q \rightarrow R$ ----- $P \rightarrow R$	Hypothetical Syllogism	Valid	Criticizing The Famous Saying "The End Justifies The Means"	Syntactic
<b>3</b> <b>(P.16)</b>	I Shall Be A Great Deal Too Far Off To Trouble Myself About You	If I'm Too Far Off, I'll Be A Great Deal, If I'm A Great Deal, I'll Not Trouble Myself About You	$P \rightarrow Q$ $Q \rightarrow R$ ----- $P \rightarrow R$	Hypothetical Syllogism	Valid	Criticizing Authority	Syntactic
<b>4</b> <b>(P.16)</b>	...But I Must Be Kind To Them...I'll Give Them A New Pair Of Boots Every Christmas.	If I'm A Big Deal, I Must Be Kind To Them If I'm Kind To Them, I'll Give Them A New Boots Every Christmas	$P \rightarrow Q$ $Q \rightarrow R$ ----- $P \rightarrow R$	Hypothetical Syllogism	Valid	Criticizing Authority And Religion (Christmas Presents)	Syntactic
<b>5</b> <b>(P.16)</b>	They Must Go By The Carrier, And How Funny It'll Seem...Odd The Direction Will Look!	If I'll Send Them Boots, It'll Be By The Carrier If I'll Send Them By Carrier, That Will Be Funny And Odd	$P \rightarrow Q$ $Q \rightarrow R$ ----- $P \rightarrow R$	Hypothetical Syllogism	Valid	Criticizing Authority By Creating Humor And Nonsense	Syntactic
<b>6</b> <b>(P.17)</b>	Besides, She's She, And I'm I, And—Oh Dear, How Puzzling It All Is!	If She Is She, Then She Is Not I If She Is Not I, Then I Am I	$P \rightarrow Q$ $Q \rightarrow R$ ----- $P \rightarrow R$	Hypothetical Syllogism	Valid	Questioning Identity (Based On Linguistic References)	Syntactic
<b>7</b> <b>(P.22)</b>	I Know Something Interesting Is Sure To Happen, Whenever I Eat Or Drink Anything	If Eating Or Drinking Anything Makes Something To Happen, Then Drinking This Bottle	$P \rightarrow Q$ $Q \rightarrow R$ ----- $P \rightarrow R$	Hypothetical Syllogism	Valid	Criticizing Human Nature (Body Changes (Relating Eating And Drinking To Growth))	Syntactic

		Will Make Something To Happen, If It'll Make Something To Happen, Then It Might Make Me Grow Large Again					
<b>8</b> <b>(P.22)</b>	...That'll Be A Comfort, One Way— Never To Be An Old Woman	If I'll Never Get Older, Then I'll Never Be An Old Woman If I'll Never Be An Old Woman, Then It'll Be Comfort	$P \rightarrow Q$ $Q \rightarrow R$ ----- $P \rightarrow R$	Hypothetical Syllogism	Valid	Criticizing Human Nature (Getting Old)	Syntactic
<b>9</b> <b>(P.23)</b>	If I Eat One Of These Cakes, It's Sure To Make Some Change In My Size And, As It Can't Possibly Make Me Larger, It Must Make Me Smaller.	If I Eat One Of These Cakes, Then It'll Make Some Change In My Size, If It'll Make Some Change In My Size, Then, It Must Make Me Smaller	$P \rightarrow Q$ $Q \rightarrow R$ ----- $P \rightarrow R$	Hypothetical Syllogism	Valid	Criticizing Human Nature (Body Changes (Relating Eating And Drinking To Growth)	Syntactic
<b>10</b> <b>(P.35)</b>	What Would Be The Use Of A Procession...If People Had All To Lie Down On Their Faces, So That They Couldn't See It?"	If People Had All To Lie Down On Their Faces, Then They'll Not See The Procession If They'll Not See It, Then It Will Be Of No Use	$P \rightarrow Q$ $Q \rightarrow R$ ----- $P \rightarrow R$	Hypothetical Syllogism	Valid	Criticizing Authority And Politics (Particularly Formal Rituals And Customs)	Syntactic
<b>11</b> <b>(P.40)</b>	Then The Eleventh Day Must Have Been A Holiday?"	If Lessons Lessen From Day To Day And There Are Ten Hours On The First Day, Then There Is No	$P \rightarrow Q$ $Q \rightarrow R$ ----- $P \rightarrow R$	Hypothetical Syllogism	Valid	Emphasizing The Importance Of Logic And Mathematics	Syntactic

		Lesson Left For The Eleventh Day. If There Is No Lesson Left For The Eleventh Day, Then It Must Have Been A Holiday					
<b>12</b> <b>(P.42)</b>	I Could Tell You My Adventures— Beginning From This Morning, But It's No Use Going Back To Yesterday, Because I Was A Different Person Then.	If I Was A Different Person Yesterday, Then The Adventures Were Not Mine. If The Adventures Were Not Mine, Then It Is No Use To Tell You About Them	$P \rightarrow Q$ $Q \rightarrow R$ ----- $P \rightarrow R$	Hypothetical Syllogism	Valid	Questioning Identity	Syntactic

**Table 3. Modus Tollens Entailments**

<b>No. And Page</b>	<b>Utterance</b>	<b>Analysis</b>	<b>Formula</b>	<b>Rule</b>	<b>Validity</b>	<b>Semantic Implications</b>	<b>Type</b>
<b>1</b> <b>(P.14)</b>	...The Antipathies I Think	If There Are People Walking With Their Heads Downwards, Then They Are The Antipathies.	$P \rightarrow Q$ $\sim Q$ ----- $\sim P$	Modus Tollens	Valid	Criticizing Social Values (Hatred)	Syntactic
<b>2</b> <b>(P.15)</b>	...And What An Ignorant Little Girl She'll Think Me Of Asking.	If I Ask Her The Name Of The Country, Then She'll Think I'm Ignorant.	$P \rightarrow Q$ $\sim Q$ ----- $\sim P$	Modus Tollens	Valid	Criticizing Social Values (Pride And Arrogance More Important Than Knowledge)	Syntactic
<b>3</b> <b>(P.15)</b>	I Wish I Could Shut Up Like A Telescope...I Think I Could If I Only Knew How To Begin.	If I Knew How To Begin, Then I Could Shut Up Like A Telescope.	$P \rightarrow Q$ $\sim Q$ ----- $\sim P$	Modus Tollens	Valid	Emphasizing The Importance Of HOW	Syntactic

<b>4</b> <b>(P.17)</b>	I'm Sure I'm Not Ada... For Her Hair Goes In Such Long Ringlets	If I Am Ada, Then My Hair Must Go In Such Long Ringlets	$P \rightarrow Q$ $\sim Q$ ----- $\sim P$	Modu s Tolle ns	Valid	Questioning Identity (Based On Beauty)	Syntactic
<b>5</b> <b>(P.17)</b>	I Can't Be Mabel, For I Know All Sorts Of Things, And She... Knows Such A Very Little!	If Am Mable, Then I Must Know Little	$P \rightarrow Q$ $\sim Q$ ----- $\sim P$	Modu s Tolle ns	Valid	Questioning Identity (Based On Knowledge)	Syntactic
<b>6</b> <b>(P.18)</b>	...But It Said Nothing. "Perhaps It Doesn't Understand English"	If It Said Nothing, Then It Doesn't Understand English	$P \rightarrow Q$ $\sim Q$ ----- $\sim P$	Modu s Tolle ns	Valid	Emphasizing That Silence Has Meaning	Syntactic
<b>7</b> <b>(P.23)</b>	...If They Had Any Sense, They'd Take The Roof Off	If They Had Any Sense, Then They'd Take The Roof Off	$P \rightarrow Q$ $\sim Q$ ----- $\sim P$	Mode s Tolle ns	Valid	Criticizing Stupidity By Creating Humor	Syntactic

**Table 4. Disjunctive Syllogism Entailments**

<b>No. And Page</b>	<b>Utterance</b>	<b>Analysis</b>	<b>Formul a</b>	<b>Rule</b>	<b>Validi ty</b>	<b>Semantic Implications</b>	<b>Type</b>
<b>1</b> <b>(P.15)</b>	But Do Cats Eat Bats, I Wonder... Do Bats Eat Cats?	Cats Eat Bats Or Bats Eat Cats	$P \vee Q$ $\sim P$ ----- Q	Disjuncti ve Syllogis m	Invalid	Questioning Meanings (Both Reference And Sense)	Syntacti c
<b>2</b> <b>(P.16)</b>	...But I Must Be Kind To Them Or Perhaps They Will Not Walk The Way I Want To Go	If I'm Not Kind To Them They Will Not Walk The Way I Want	$P \vee Q$ $\sim P$ ----- Q	Disjuncti ve Syllogis m	Valid	Criticizing Politics	Syntacti c
<b>3</b> <b>(P.17)</b>	If I'm Not The Same... Who In The World Am I?	If I Was The Same, Then I'm Alice If I Wasn't The Same, Then I'm Not Alice (Am I Alice Or Am I Not Alice?)	$P \vee Q$ $\sim P$ ----- Q	Disjuncti ve Syllogis m	Valid	Questioning Identity In Light Of Repeated Changes	Syntacti c
<b>4</b> <b>(P.23)</b>	...If You Do, I'll Set Dinah On You.	You Will Not Burn The House, Or I'll Set Dinah On You.	$P \vee Q$ $\sim P$ ----- Q	Disjuncti ve Syllogis m	Valid	Criticizing Authority And The Use Of Power (Threats)	Syntacti c

<b>5</b> <b>(P.30)</b>	If I Don't Take This Child Away With Me, They're Sure To Kill It In A Day Or Two	If I Will Not Take This Child Away With Me, They'll Kill It (I'll Take It Or They Will Kill It)	$\frac{P \vee Q}{\sim P}$ $Q$	Disjunctive Syllogism	Valid	Criticizing Human Justice	Syntactic
<b>6</b> <b>(P.34)</b>	They Couldn't Have Done That...They'd Have Been Ill.	If They Lived On Treacle, Then They Would Have Been Ill (They Would Not Live On Treacle Or They Would Have Been Ill)	$\frac{P \vee Q}{\sim P}$ $Q$	Disjunctive Syllogism	Valid	Criticizing Human Nature (The Need To Eat Various Kind Of Food)	Syntactic