Second Language Acquisition of the Dative Alternation in English and Arabic: A Bidirectional Study

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Dedication

It is my genuine gratefulness and warmest regard that I dedicate my PhD thesis to every member of my family and many friends of mine. A special dedication with feeling of endless love and respect to my beloved parents, Saad and Eida whose words of encouragement and love ring in my ears all the time. It is also dedicated to my sweetheart wife Dalal and the centre of my heart Mohammed, Abdul-Malik, Abdul-Majid and Leen. I finally dedicate it to my best friends Majdi and Hani who have never left my side and are very special.

Abstract

This thesis reports on an empirical investigation of native-language (L1) influence on the acquisition of second-language (L2) argument structures in which the L1 argument structures are a superset of those allowed in the L2, and vice versa. To do so, the dative alternation was adopted as a linguistic phenomenon. English allows all verbs in the Give class, Tell class and Throw class to occur in both the Prepositional Dative (PD) construction and the Double Object Dative (DOD) construction. In contrast, only some verbs in the Give class such as 'give' and 'sell' and the Tell class such as 'tell' and 'show' are allowed to appear in the DOD construction in Arabic. On the other hand, Scrambling Dative (SD) constructions are allowed in Arabic whereas they are not allowed in English.

Two empirical studies investigated three questions: 1) to what extent can L2 learners realise the grammaticality of structures that are not allowed in their L1? 2) To what extent are they able to perceive the ungrammaticality of certain structures in their L2? 3) Which dative structure is acquired earlier? The first investigation was the L2 English study which explored the acquisition of the English dative alternation by native speakers of Arabic. The second investigation was the L2 Arabic study which explored the acquisition of the Arabic dative alternation by native speakers of English. The data were analysed according to four hypotheses: the Fundamental Difference Hypothesis, the Representational Deficit Hypothesis, the Subset-Superset Hypothesis, the Full Transfer and Full Access approach and the Feature Reassembly Hypothesis. The results of the L2 English study generally revealed that Arab leaners of English could not acquire what is absent in their L1 and they generally unlearn the structures that are not allowed in the L2. The results of the L2 Arabic study generally showed that English learners of Arabic could not recognise the ungrammaticality of some Arabic structures. However, they could acquire the SD structures. Overall, the bidirectional results give support to the Subset-Superset Hypothesis and the Full Transfer and Full Access approaches as L2 learners initially transfer their L1 grammar and only gradually restructure themselves and arrive at the L2 grammar, once effective positive evidence is provided.

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List of Phonetic Symbols

The transliteration symbols of consonants and vowels are adapted from the International Phonetic Alphabet, as shown in the following table.

The Arabic sounds	The transcription symbols
أ	a
ب	b
ت	t
ث	th
ج	J
ح	ħ
خ	x
د	d
ذ	ż
ر	r
ز	z
س	s
ش	sh
ص	š
ض	đ
ط	ŧ
ظ	ž
ع	'
غ	ğ
ف	f
ق	q
ك	k
ل	l
م	m
ن	n
ه	h
و	w (produced with lips fully around)
	o (produced with lips slightly around)
ي	y

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Author's Declaration

I hereby certify that this thesis is a presentation of my own original research work and effort. It has never been previously accepted in candidature for any academic degree anywhere and wherever other sources of information and contributions were involved, they are clearly indicated and acknowledged. The thesis was done under the supervision of Prof. Peter sells, the head of the department of Language and Linguistic Science at University of York.

The intimal version of the acquisition of the English dative alternation by native speakers of Arabic (pilot study) has been published under the title:

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The acquisition of the Arabic dative alternation by English native speakers was presented as a poster presentation in the 8th Saudi Students Conference-UK at Imperial College London. It was also presented orally in the 3rd Postgraduate Academic Researchers in Linguistics at York.

I hereby give permission for my thesis, if accepted, to be available for photocopying and for interlibrary loan, and for the title and summary to be made available to outside organisations.

Chapter 1 Introduction

1.1 Introduction

During the past decades, in the field of Second Language Acquisition (SLA), the influence of First Language (L1) on the acquisition of Second Language (L2) has been much debated and extensively investigated (Gass & Selinker 1983; Odlin 1989; White 1989; Schwartz & Sprouse 1996; Jarvis 1998; Inagaki 2002; Jarvis & Pavlenko 2008). One of focusses of the study of the L1 impact on SLA is the divergence in structural properties in the L1 and the L2. The divergence between the L1 and the L2 argument structures is one of the obstacle that face L2 learners. In regard to structural divergences, the vital issue has to be explored is that to what extent the similarities and the differences between the L1 and the L2 argument structures have an impact on the acquisition of the L2 grammar. To illustrate an example of the challenge facing L2 learners is the acquisition of structures that are not allowed in their L1, the current study intends to investigate how some verb classes are diversely utilised in the L1 and the L2. This can be seen in the case of the expressing of certain verbs like 'read' in English and Arabic. English, on one hand, allows 'read' to occur in both the Prepositional Dative (PD) structure and in the Double Object Dative (DOD) construction, as exemplified in (1):

(1) a. Timor read the story to Campbell.   (PD)
     b. Timor read Campbell the story.   (DOD)

Arabic, conversely, only allows the PD structure with verbs such as 'read', as produced in (2a) and the DOD structure is grammatically unacceptable, as exemplified in (2b):

(2) a. قرأَ طلالٌ القصةَ لياسرٍ   (PD)

qara-a	talal-un	alqišat-a	li	yasser-in
read	Talal-Nom	the story-Acc	prep	Yasser-Gen

'Talal read the story to Yasser.'

b. قرأ طلالٌ ياسرًا القصةَ (DOD)

*qara-a	talal-un	yasser-an	alqišat-a
read	Talal-Nom	Yasser-Acc	the story-Acc

'Talal read Yasser the story.'

These illustrations do not only provide an example of the difficulties which may face L2 Arabic learners of English acquiring structures are not allowed in their L1 namely the acquisition of verbs like 'read' with the DOD structure, as exemplified in (1b), but also show an instance of the difficulties which may face L2 English learners of Arabic learning that some L1 properties are not permitted in the L2 such as the DOD structure with certain verbs such as 'read', as illustrated in (2b).

A further example of the investigation of the acquisition of structures that are not allowed in the L2 is the acquisition of Scrambling Dative (SD) structures in Arabic by native speakers of English. There is divergence between Arabic and English in the allowance of a variety of dative word orders. Arabic allows the SD constructions, as presented in (3):

(3) a. باعَ عمرُ لفاطمةَ القلمَ

ba'a	omar-u	li	fatimat-a	alqalam-a
sold	Omar-Nom	prep	Fatimah-Gen	the pen-Acc

'Omar sold to Fatimah the pen.'

b. باعَ عمرُ القلمَ فاطمةً

ba'a	omar-u	alqalam-a	fatimat-a
sold	Omar-Nom	the pen-Acc	Fatimah-Acc

'Omar sold the pen Fatimah.'

English, however, has a fixed word order which means that the SD structures are grammatically unacceptable, as shown in (4):

(4) a. *Ruth sold to Paul the pen.
    b. *Ruth sold the pen Paul.

Examples (3) and (4) present a further challenge which probably face English learners of Arabic to acquire the SD constructions due to their ungrammaticality in the L1. These examples also provide an instance of the challenge for Arab learners of English to notice the ungrammaticality of these structures in the L2.

The language pair Arabic-English is particularly interesting due to their typological divergences which meet Kellerman's (1983) psychotypology and transferability constraint, which implies that transfer possibly occurs. Nevertheless, these languages vary in regard to the dative alternation, a syntactic phenomenon that is observed in English but not in Arabic and vice versa. Investigating the acquisition of the English dative alternation by native speakers of Arabic and the acquisition of the Arabic dative alternation by English native speakers thus make an excellent testing ground to explore the incidence and the effect of transfer.

Investigating the acquisition of L2 in such circumstances (whether Arabic speakers learning English or English speakers learning Arabic) highlights a variety of broad questions regarding the acquisition of L2 to be outlined in the current study: the extent to which L1 grammar has a vital influence on the development of the acquisition of L2. Do L2 learners initially consider that the L1 and the L2 are identical with regarding to the argument structures of the dative alternation and transfer the L1 structures into the L2? Will the acquisition of structures in the L2 exclude L1 structures, or will L2 learners permit both structures in their mental grammars? These general questions will be explored in the bidirectional study of English and Arabic in the context of the acquisition of the dative alternation in order to elicit intuitions about how verb

classes including act of giving, type of communication and ballistic motion are expressed in English and Arabic and the number of structures that are allowed in both languages.

The overall structure of the current chapter is as follows. It first defines the linguistic phenomenon under question followed by a brief theoretical background to the relationship between verb meanings and syntactic structure. The study of this relationship is generally acknowledged as the study of 'argument structure' or 'argument realisation'. Section 4 outlines certain semantic features: linking rules, Broad Range rules (BRRs) and Narrow Range rules (NRRs). It then goes on to give a brief overview of positive and negative evidence. The following section defines certain terms used in the study. Along with shedding light on the purposes of the study, its significance is presented. The significance of the study is followed by a section on how the chapters of this thesis are organised.

1.2 Overview of the linguistic phenomenon

Out of numerous morpho-syntactic features, the dative alternation has been extensively studied in the literature. It is selected as the linguistic focus of the present study. The dative alternation can be generally described as the possibility of expressing a Theme and a Goal or a Recipient in two distinct structures. In example (5) the phrase 'the book' is the Theme. 'Ann' is preceded by a preposition 'to', the Goal as in (5a) and the Recipient as in (5b). The two variants syntactically differ from each other, hence the two distinct names given to them. Variant (a) will be referred to as the PD 'NP1 V NP2 to NP3' pattern, and (b) will be known as the DOD 'NP1 V NP3 NP2' pattern.

(5) a. Paul gave the book to Ann.
     b. Paul gave Ann the book.

1.3 Argument structure

Argument structure can be defined as the lexical representation of verbs, nouns, adjectives, and even prepositions which states adequate information about these items' arguments in order to permit their syntactic structure to be determined. The concern of this thesis is the acquisition of lexical categories, in particular the verb. The verb is the head of Verb Phrase (VP) and its vital element. There are a variety of verb classifications regarding the transitivity which determine the possibility of having objects and the number of the objects if it is possible to take an object. Each verb usually requires certain arguments which sometimes are from one to three. The verb class that selects one argument is referred to as intransitive verbs. Examples of these verbs are 'laugh', 'cry', 'walk' and 'sneeze'.

(6) a. David cried.
     b. Catharine laughed.
     c. Tom ran into the park yesterday.
     d. The old man sneezed.

An example of verb class that selects two arguments is the 'change of state' such as 'open', 'brake' and 'dry', as shown in (7). This class is transitive. Transitive verbs are known by the compulsory presence of two arguments: a subject and a direct object. The subject is assigned nominative case while the direct object is assigned accusative case.

(7) John opened the door.

Transitive verbs assign a variety of roles to their argument structures. First, the subject is assigned as an Agent, Cause, Origin, Location, Possessor or Experiencer. Second, the direct object is assigned as a Patient, Theme or Factitive. The assignment of these roles of the argument structures of transitive verbs are exemplified in (8):

(8) a. Mary$_{\text{Agent}}$ broke the door$_{\text{Patient}}$.

    b. Mary$_{\text{Agent}}$ painted the window$_{\text{Theme}}$.

    c. Mary$_{\text{Agent}}$ made lunch$_{\text{Factitive}}$.

    d. Sue$_{\text{Goal}}$ received a parcel$_{\text{Theme}}$.

    e. The wind$_{\text{Cause}}$ moves the grass$_{\text{Theme}}$.

    f. Maya$_{\text{Experiencer}}$ loves English literature$_{\text{Theme}}$.

    g. Maya$_{\text{Possessor}}$ owns a big house$_{\text{Theme}}$.

    h. The box$_{\text{Location}}$ contains 5 bottles of water$_{\text{Theme}}$.

A further verb class which requires three arguments is called ditransitive. Ditransitive verbs are quite identical to transitive verbs but they require an extra argument which is traditionally called the indirect object. The arguments of ditransitive verbs are a subject, a direct object and an indirect object. The indirect object is either realised as a Prepositional Phrase (PP) headed by the preposition 'to/for' such as in (5a) or sometimes as a direct object as in (5b). The subject and the direct object have the identical roles as in transitive verbs. However, the indirect object is assigned as a Recipient, Locational or Benefactive, as shown in (9):

(9) a. Maya$_{\text{Agent}}$ gave a pen $_{\text{Theme}}$ to Ben$_{\text{Recipient}}$.

    b. Susan$_{\text{Agent}}$ sent a letter $_{\text{Theme}}$ to Leeds$_{\text{Locational}}$.

    c. Susan$_{\text{Agent}}$ made a lunch $_{\text{Factitive}}$ for her son$_{\text{Benefactive}}$.

Notice that the indirect object is not allowed to be realised as a direct object with all ditransitive verbs as in the following examples:

(10) *Ben$_{\text{Agent}}$ answered his father$_{\text{Benefactive}}$ the phone$_{\text{Theme}}$.

The ditransitive verbs and their argument structures are the concern of this thesis.

1.4 Semantic rules

1.4.1 The linking theory

Pinker (1989) draws our attention to a semantic explanation in which he argued that the dative alternation is an alternation between the two 'thematic cores': 'X caused Y to go to Z' presenting the PD structure and 'X caused Z to have Y' yielding the DOD structure.

Semantic constructions are projected to achieve realisations through 'linking rules' which is defined by Pinker (1989:74):

'Linking rules are regular ways of mapping open arguments onto grammatical functions or underlying syntactic configurations by virtue of their thematic roles; they are the mechanisms that create the syntactic argument structure associated with a given thematic core.'

The Agent, is named X in the thematic cores, is linked to the subject, Y in the thematic core is the Theme, is mapped onto the direct object and Z in the thematic core is the Goal which is mapped onto the indirect object. Moreover, Pinker argued that these linking rules are properties of Universal Grammar (UG), therefore all languages use them and children do not have to learn them since they are innate.

1.4.2 The broad range rules

A broad range of rule relates two 'thematic cores', which are conflations of semantic elements that define a kind of possible verb meaning. Pinker (1989) proposed that rules for argument structure alternations are, instead, lexical rules that create a new verb from an old one by changing the verb's semantic structure. For example, the rule for dative alternation takes a predicate that means roughly 'X cause Y to go to Z' (as in (5a) *gave the book to Ann*) and

converts it into a predicate that means 'X cause Z to have Y' (as in (5b) *gave Ann the bool*) Pinker (1989: 82). Additionally, Pinker proposed that the PD construction 'X caused Y to go to Z' can be converted via the BRRs to permit the DOD construction 'X caused Z to have Y' when a given verb is cognitively compatible with the causation of possession change. Nevertheless, compatibility with the BRRs is an essential condition for a verb to alternate as the BRRs are not able to govern 'negative exceptions'.

1.4.3 The narrow range rules

Despite meeting the specifications of the BRRs, some verbs still are not allowed to alternate such as 'whisper' and 'push'. In order to solve this problem, Pinker suggested a further proposal known as the NRRs, in which verbs are classified into ten or more subclasses, some of them alternating and others non-alternating.

For the dative alternation, there are the NRRs that pick out two important classes of verbs that alternate, as shown in (11) (Pinker 1989; Gropen, et. a1. 1989). Classes of verbs that lack the NRRs and so do not alternate are shown in (12):

(11)   Narrow range alternating verb classes:
       a. Verbs signifying acts of giving e.g., 'give', 'hand', 'sell' etc.
       b. Verbs of instantaneous causation of ballistic motion e.g., 'throw', 'toss', 'kick' etc.
       c. Verbs of sending e.g., 'send', 'mail', 'ship' etc.
       d. Verbs of accompanied motion in a direction e.g., 'bring' and 'take'.
       e. Verbs of future having e.g., 'offer', 'promise', 'allow' etc.
       f. Verbs of type of communicated message. e.g., 'tell', 'show', 'teach' etc.
       g. Verbs of instrument communication e.g., 'radio', 'telephone', 'fax', 'wire' etc.
       h. Verbs of creation e.g., 'bake', 'make', 'build', 'cook' etc.
       i. Verbs of obtaining e.g., 'find', 'order' etc.   Gropen et al. (1989: 244)

(12)   Narrow range non-alternating verb classes:

a. Verbs of fulfilling e.g., 'credit', 'present' etc.

b. Verbs of accompanied motion in some manner e.g., 'carry', 'pull', 'push' etc.

c. Verbs of manner of speaking e.g., 'shout', 'whisper', 'scream' etc.

f. Verbs of choosing e.g., 'choose', 'pick', 'select' etc.

e. Verbs of communication of proposition and propositional attitudes e.g., 'say', 'assert' etc. Gropen et al. (1989: 244)

1.5 Positive and negative evidence

L2 learners usually are provided with two types of linguistic input namely positive evidence and negative evidence. Positive evidence is the grammatical elements of L2 grammar which are given to L2 learners through the exposure to L2. Negative evidence is more complicated than positive evidence which is defined by Gass (2002: 170-171):

'Information about what is incorrect in the language produced by a learner and what is needed to make a correction to align the learner's language with the target language.'

Negative evidence is also defined by Mitchell and Myles (2004: 22):

'Some kind of input that lets the learner know that a particular form is not acceptable according to target like norms.'

It has been mentioned by Long (1996) that L2 learners receive negative evidence explicitly by correcting L2 errors and implicitly by incidental error correction. Negative evidence is exposed to L2 learners by both oral feedback and written feedback.

1.6 Definition of terms

There are certain terms needed to be clarified for the purpose of the study: SLA, L1, L2, input, positive evidence, negative evidence, overgeneralisation, undergeneralisation, UG and fossilisation.

1. SLA is generally understood to mean 'the way in which people learn a language other than their mother tongue, inside or outside of a classroom.' (Ellis 2003:3).
2. L1 is the mother tongue of the participants and sometimes is called native language.
3. L2 refers to the language that learners attempt to learn and sometimes is called the target language.
4. Input is the oral or written samples of language L2 learners receive during learning L2.
5. Positive evidence is the input which only shows the learners what is grammatical in L2.
6. Negative evidence is the information which inform learners what is ungrammatical in L2. This can be either direct or indirect. The direct negative evidence occurs when learners are informed that the sentence is ungrammatical. Indirect negative evidence occurs when learners realise the absence of a structure and they assume that the absence of such structure is due to its ungrammaticality.
7. Overgeneralisation is used to clarify the process of extending an interlanguage feature which is not allowed in the target language (e.g. *He eated an apple).
8. Undergeneralisation refers to the process of underperforming an L2 feature which is absent in the L1 grammar. It is the opposite of overgeneralisation.
9. UG is used to refer to a linguistic theory, which is suggested by Chomsky, the ability of learning and acquiring a language is innate.
10. Fossilisation means the processes responsible for the cessation of the acquisition of L2.

1.7 The objectives of the study

This thesis has certain purposes. One is to show how some verb classes such as act of giving, type of communication and ballistic of motion are divergently utilised in English and Arabic. It seeks to investigate L2 learners' ability to copy with the superset and subset between their L1 and L2. Precisely, the way Arab learners of English deal with the superset of English verbs that are allowed to occur in the DOD structure as well as their awareness of the ungrammaticality of the SD structures in English. It also intends to examine the capability of English learners of Arabic in recognising not only the grammaticality of the SD structures in Arabic but also the ungrammaticality of the DOD structure with certain verbs such as 'read'. An extra concern of this thesis is to explore which dative structure is acquired earlier by L2 learners in both experimental studies.

A further objective of investigating the acquisition of the dative alternation in English and Arabic is to recognise the difficulties that face L2 learners of English and Arabic in order to identify them and how they can be solved. Part of this objective is to investigate whether these difficulties are related to a specific proficiency level.

1.8 The significance of the study

It has been widely pointed out by a number of researchers in language acquisition that the acquisition of the dative alternation is one of the challenging areas for L1 learners (Collins 1995; Gropen et al. 1989) and L2 learners (Carroll & Swain 1993; Hawkins 1987; Mazurkewich 1984; Mazurkewich & White 1984). This challenge is due to its complex syntactic nature (Ellis 2006) as dative verbs involve both direct and indirect objects which may or may not alternate, as exemplified in the following examples:

(13)   a. Mary gave a book to Lynn.

       b. Mary gave Lynn a book.

(14)   a. Mary donated the money to the charity.

b. *Mary donated the charity the money.

Acquiring a sentence such as in (13b) may lead learners to overgeneralise the rule to dative verbs that are not allowed to occur in the DOD structure such as that in (14b). This difficulty does not only face L1 learners but also L2 learners. Therefore, the DOD structure sometimes takes a while to be acquired. As mentioned by Demuth et al., (2005:441):

'It is therefore not surprising that the acquisition of the lower-frequency structure [the DOD] takes some time to master.'

Consequently, carrying out a bidirectional investigation of the acquisition of the dative alternation in English and Arabic by adult L2 learners is an attempt to provide an insight to avoid the challenges that may face Arabic and English L2 learners or at least provide a solution to overcome these obstacles and assist L2 learners to straightforwardly acquire such a linguistic phenomenon.

This thesis provides a contribution to the field of SLA by investigating the acquisition of the argument structures of the dative verbs cross linguistically (English and Arabic). To date, the acquisition of the English dative alternation in L2 is a topic that has received much attention and been extensively explored with a variety of L1 backgrounds, including French, Turkish, Spanish, Arabic, Japanese, Korean, Russian and Chinese (for instance, Mazurkewich 1984; Hawkins 1987; Carroll & Swain 1993; Hamilton 1994; Whong-Barr & Schwartz 2002; Marefat 2005; Radwan 2005; Oh & Zubizarreta 2003, 2006; Oh 2010; Ansarin & Arasteh 2012; De Cuypere et.al 2014; Jäschke & Plag 2015). However, the acquisition of the English dative alternation by Arabic native speakers may not be investigated as extensively as it should be. Moreover, the literature includes several studies investigating the acquisition of the dative alternation in certain languages such as French by White (1991), English by Campbell & Tomasello (2001), Spanish by Cuervo (2007) and Norwegian by Anderssen (2014). To the best

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of my knowledge, apart from Hamdan (1997) there is no experimental study investigating the acquisition of the Arabic dative alternation by native speakers of English. Therefore, the present study is undertaken to attempt to provide a contribution to L2 acquisition researches by providing evidence in this domain by investigating the acquisition of the English dative alternation by native speakers of Arabic and the acquisition of the Arabic dative alternation by English native speakers.

It also attempts to provide evidence to L2 theories by exploring the acquisition of the dative alternation as argument structure. The acquisition of argument structures plays a pivotal role in modern theories of languages. As Pinker (1989: 4) stated:

> 'Lexical argument structures play an extremely important role in modern theories in language. Beginning with Aspects of the Theory of Syntax (Chomsky 1965) and continuing to the present, it has become apparent that many of the facts of grammar are caused by properties of the particular lexical items that go into sentences. … Since verbs' argument structures assume a large burden in explaining the facts of language, how argument structures are acquired is a correspondingly crucial part of the problem of explaining language acquisition.'

This thesis makes a contribution by presenting experimental evidence from the L2 acquisition of verbs in English and Arabic that L2 learners acquire what is an unmarked structure earlier than a marked structure in L2. As found in the L2 English study, Arab learners acquired the Basic Prepositional Dative (BPD) structure earlier than the Basic Double Object Dative (BDOD) structure whereas in the L2 Arabic study, English learners acquire the BDOD1 structure earlier than the BPD1. Moreover, English learners of Arabic at both pre-intermediate and upper-intermediate levels acquired the Scrambling Prepositional Dative (SPD) structures which are not allowed in their L1 grammar. The upper-intermediate English learners of Arabic also acquired the Scrambling Double Object Dative (SDOD) structure which is absent in their

L1 grammar as well. These findings could be evidence to argue that L2 learners apply identical universal linguistic rules as LI learners when learning the syntactic representation of the dative structures in L2. It also provides a support of the view that L2 learners sometimes are constrained by their L1 grammar when acquiring semantic features required by certain verb classes, as the Arab learners of English could not acquire the BDOD2 structure in English due to its absence in the L1 grammar. Further evidence to support the constraint of L1 grammar is the acceptance of the SD structures in English by Arabic native speakers due to their availability in the L1 grammar.

With regard to language teaching, the current study may assist textbook writers and teachers to understand how learners acquire L2 and the potential obstacles that may face them. This understanding will possibly assist them to improve the materials used in teaching L2 and develop L2 teaching methods.

1.9 The organisation of the study

The remainder of this thesis is set up in the following manner. The second chapter firstly provides a brief descriptive account of verb classes under investigation. It then goes on to highlight the relevant theoretical background on the dative alternation in English and Arabic by concentrating on some linguistics phenomena. It starts with the English linguistic phenomena which will be divided into two parts. The first part deals with the syntactic feature of the English dative alternation. The second part provides a brief overview of the semantic features of the English dative alternation by shedding light on two semantic proposals the BRRs and the NRRs and their explanation why some verbs are not allowed to occur in the DOD structure. It also presents certain further features such as the animacy constraint, the physical transfer constraint and the semantic differences between the PD and the DOD constructions. Secondly, the theoretical background of the Arabic dative alternation will be outlined syntactically and semantically. The syntactic features first will be presented by looking at the flexibility of the

internal arguments of the dative verbs. The second section of the theoretical background of the Arabic dative alternation is concerned with several semantic features including the animacy constraint and the notion of simultaneous participation in the action. Chapter three shows the phenomenon of learners' acquisition of argument structures, followed by presentations of five hypotheses: the Fundamental Difference Hypothesis (FDH), the Representational Deficit Hypothesis (RDH), the Subset-Superset Hypothesis, the Full Transfer and Full Access (FT/FA) approach and the Feature Reassembly Hypothesis (FRH). It then addresses a brief summary of certain previous studies that investigated the acquisition of the dative alternation in L1 and L2 acquisition. Finally, the research topics are presented.

Chapter four sets out to highlight the empirical studies carried out in this bidirectional investigation, the producer and the data analysis. This chapters is split into four sections. The first section shows an investigation of how Arab learners of English acquire the dative alternation by laying out not only the motivation and hypotheses but also the methodology used for the L2 English study. Firstly, it presents the motivation of the L2 English study and its hypotheses. Secondly, it identifies the participants in this study and describes materials that were used to examine the research questions. The second section of this chapter summarises the empirical study that carried out the investigation of the acquisition of the Arabic dative alternation by native speakers of English by outlining the motivation of the L2 Arabic study and its methodology that applied to examine its research questions. It is organised first to shed light on the motivation of the study and the potential hypotheses. It then goes on to present the methodology of this study by presenting the process of choosing the participants and the materials which included the proficiency test and the experimental questionnaire. The third section presents the procedure of the data collection for both studies. Finally, it illustrates how the data of this bidirectional study were analysed.

Chapter five provides the results of the L2 English study and their discussion. This chapter is started by presenting the results of the acquisition of the basic structures followed by the presentation of the results of the unlearning of the scrambling structures. The discussion of these

results is drawn by looking at the results of basic structures with the PD and the DOD structures and the results of scrambling structures with the PD and the DOD structures.

Chapter six reports the results of the L2 Arabic study and shows their discussion. It has two parts. The first part provides an extensive presentation of the results of the acquisition of the basic structures followed by the report of the result of the acquisition of the scrambling structures. The second part deals with the discussion. It is subdivided into two sections: the first one discusses the results of basic structures and the second part reports the discussion of the results of scrambling structures.

Finally, the study's conclusion will be presented by viewing the general discussion of the bidirectional study and summarising the main points of the study and the findings. It also presents limitations of the study and some potential suggestions for further research.

Chapter 2 The review of the theoretical background of the study

2.1 Introduction

The objective of the current study is to investigate the acquisition of the dative alternation in English and Arabic as well. Its main aim is to investigate the extent to which L2 learners are influenced by their L1 grammar. As a part of this thesis, this chapter will mainly present the linguistic background concerning the dative alternation in the languages in question.

The organisation of this chapter is as follows. It starts with certain verb classes under investigation. It then attempts to provide a wide view of background information about the dative alternation in English and Arabic by concentrating on certain points. Firstly, the theoretical background of the English dative alternation. This point falls into two main sections. The first section introduces the syntactic features of the English dative alternation. The second section presents the semantic features of the English dative alternation by shedding light on two semantic proposals the BRRs and the NRRs and their explanation why some verbs cannot occur in the DOD structure, the animacy constraint, the physical transfer constraint and the semantic differences between the PD and the DOD constructions. Secondly, the theoretical background of the Arabic dative alternation will be outlined syntactically and semantically. The syntactic features first will be presented followed by several semantic features: the animacy constraint and the notion of the simultaneous participation in the action

2.2 Verbs classes under investigation

Pinker (1989) semantically classified verbs into ten subclasses or more; some of these subclasses are alternating while others are not. The current study will focus on three of them: verbs of act of giving, verbs of communication and verbs of ballistic motion. These verb classes will be described in detail in the following subsections

2.2.1 Act of giving verbs class

The act of giving verb class comprises many verbs, such as *a'ta* 'give', *a'ara* 'lend', *ba'a* 'sell', and *nawala* 'hand'. In both Arabic and English, these verbs can be classified as dative verbs by virtue of having three arguments roles with an Agent, a Goal and a Theme. These verbs are allowed to occur in both the PD construction, as illustrated in (15a) and (16a) as well as the DOD construction, as exemplified in (15b) and (16b):

(15) a. ناولَ أحمدُ الكتابَ لمحمدٍ

  nawala   ahmed-u   alkitaab-a   li   mohammed-in

  handed   Ahmed-Nom   the book-Acc   prep   Mohammed-Gen

  'Ahmed handed the book to Mohammed.'

  b. ناولَ أحمدُ محمدًا الكتابَ

  nawala   ahmed-u   mohammed-an   alkitaab-a

  handed   Ahmed-Nom   Mohammed-Acc   the book-Acc

  'Ahmed handed Mohammed the book.'

(16) a. John handed the book to Peter.

  b. John handed Peter the book.

However, in Arabic but not in English, some of these verbs are only allowed to occur in the PD form, such as *dafa'a* 'pay', as observed in (17a), and the DOD form is ill-formed, as exemplified in (17b):

(17) a. دفعَ سميرٌ المالَ ليوسفَ

  dafa'a   samir-un   almal-a   lie   youssef-a

  paid   Samir-Nom   the money-Acc   prep   Youssef-Gen

  'Samir paid the money to Youssef.'

b. دفع سميرٌ يوسفَ المالَ

* dafa'a	samir-un	youssef-a	almal-a
paid	Samir-Nom	Youssef-Acc	the money-Acc

'Samir paid Youssef the money.'

2.2.2 Type of communication verbs class

The type of communication verb class consists of certain verbs such as *akbara* 'tell', *qara* 'read', *kataba* 'write', *allama* 'teach', *saala* 'ask' and *araa* 'show'. A large number of these verbs can alternate in both languages, as exemplified in the following:

(18)   a. أرى خالدٌ العرضَ لناصرٍ

ara	khalid-un	alarđ-a	li	nasser-in
showed	Khalid-Nom	the offer-Acc	prep	Nasser-Gen

'Khalid showed the offer to Nasser.'

b. أرى خالدٌ ناصرًا العرضَ

ara	khalid-un	nasser-an	alarđ-a
showed	Khalid-Nom	Nasser-Acc	the offer-Acc

'Khalid showed Nasser the offer.'

(19)   a. Tom showed the book to Heather.
       b. Tom showed Heather the book.

There are a number of verbs in this class that are not allowed to occur in the Arabic DOD construction but rather occur in the PD construction such as *qara* 'read' and *kataba* 'write', as shown in (20):

(20)　a. كتبَ يوسفُ الرسالةَ لسعدٍ

kataba	youssef-u	arrsalt-a	li	saad-in
wrote	Youssef-Nom	the letter-Acc	prep	Saad-Gen

'Youssef wrote the lesson to Saad.'

　　b. كتبَ يوسفُ سعدًا الرسالةَ

*kataba	youssef-u	saad-an	arrsalt-a
wrote	Youssef-Nom	Saad-Acc	the letter-Acc

'Youssef wrote Saad the lesson.'

2.2.3 Ballistic motion verbs class

The ballistic motion verb class involves many verbs: for example *rama* 'throw', *qażafa* 'toss', *rakala* 'kick', *lakama* 'poke', *latama* 'slap' and *atlaqa* and *saddada* 'shoot'. This class is considered to be alternating in English but does not alternate in Arabic. Consider examples (21) and (22) below:

(21)　a. رمى فايزٌ القلمَ إلى زيدٍ

rama	fayez-un	alqalam-a	ela	zaid-in
threw	Fayez-Nom	the pen-Acc	prep	Zaid-Gen

'Fayez threw the pen to Zaid.'

　　b. رمى فايزٌ زيدًا القلمَ

* rama	fayez-un	zaid-a	alqalam-a
threw	Fayez-Nom	Zaid-Acc	the pen-Acc

'Fayez threw Zaid the pen.'

(22)　a. Ellis threw the ball to Owen.
　　　b. Ellis threw Owen the ball.

To sum up, English allows all these three verb classes to appear in the DOD construction. Arabic, on the other hand, allows some verbs in the Give class and the Tell class to occur in the DOD construction. This is further summarised in Table 1.

Table 1. Verb classes and their occurrence in the DOD construction in Arabic and English.		
Verb classes	**Arabic**	**English**
Act of giving (Give class)	Some	Yes
Type of communication (Tell class)	Some	Yes
Ballistic motion (Throw class)	No	Yes
Note: Yes: DOD allowed; NO: not allowed; Some: not all verbs allowed.		

2.3 Theoretical background: properties of the dative alternation in English

2.3.1 Syntactic features

One of the major differences between the PD and the DOD constructions is that in (22a) the dative object is marked by a free morpheme (the preposition) and in (22b) the dative object is marked by word order (Hawkins 1987). Moreover, it has been observed that the syntactic productivity of the PD construction is wider than the syntactic productivity of the DOD construction. This claim is supported by the fact that the majority of dative verbs that occur in the DOD construction can take the PD construction, however, only certain dative verbs take the DOD construction (Mazurkewich 1984, 1985; Hawkins 1987). However, some dative verbs require a recipient as in (23a), while others require a benefactive as in (23b). The possibility of one proposition sometimes excludes the other, as illustrated in (24):

(23)   a. Peter gave a book to Kim.
       b. John baked a cake for Jane.

(24)   a. John built a house for Heather.

        b. *John built a house to Heather.

It can be observed that 'build' can take the *for*-PP but not the *to*-PP. It might be argued that in English the Goal argument is assigned by the *for*-PP such as in (24a) given that being assigned by the *to*-PP is ungrammatical as in (24b) (Hawkins 1984). However, certain verbs that take the *to*-PP complements also permit the *for*-PP complement, but they have different meanings, as (25) shows:

(25)   a. John sent some flowers to Mary.

        b. John sent some flowers for Mary.   Hawkins (1984: 22)

In (25a) 'Mary' received the flowers directly from 'John', however, (25b) illustrates that either 'John' sent some flowers on behalf of 'Mary' to someone else or 'John' sent someone some flowers for 'Mary'.

A further point is that in the English PD construction, the Noun Phrase (NP) must precede the PP. Also, in the English DOD construction, both the Goal argument and the Theme argument have accusative case since the Goal argument occupies the closest position to the functional head *v*, whereas the Theme argument is assigned inherent accusative case, as illustrated in the tree (26b) (Radford 2009: 407-8); however, the Goal argument should be followed by the Theme argument.

(26)   a. Peter gave David the book.

b.

CP
　C'
　　C
　　Ø
　　TP
　　　DP
　　　Peter
　　　T'
　　　　T
　　　　Ø
　　　　vP
　　　　　DP
　　　　　~~Peter~~
　　　　　v'
　　　　　　v
　　　　　　gave+ Ø
　　　　　　VP
　　　　　　　DP
　　　　　　　David
　　　　　　　VP
　　　　　　　　V
　　　　　　　　~~gave~~
　　　　　　　　DP
　　　　　　　　the book

Structural case　　~~gave~~　　the book

Inherent case
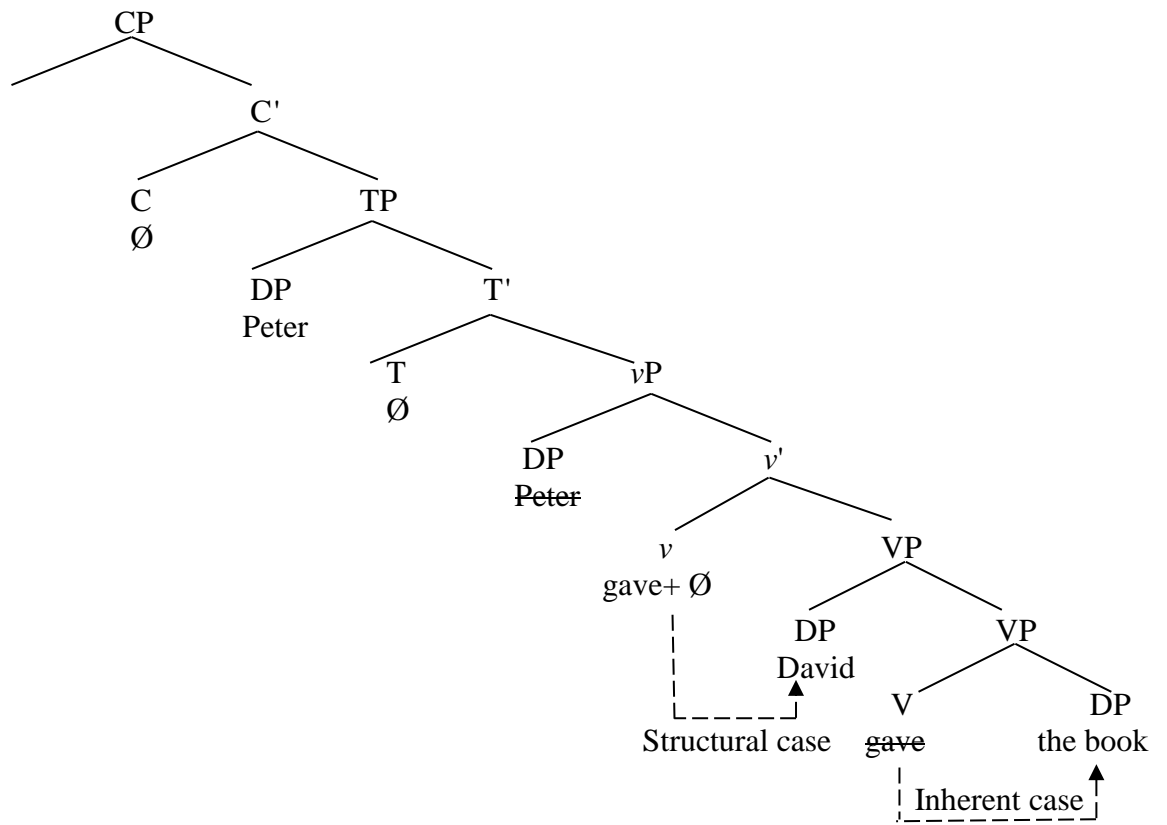
Therefore, English has fixed word order. This means that, unlike Arabic, English does not allow SD constructions as in (27):

(27)　a. *Ellis threw to Peter the pen.

　　　b. *Ellis threw the pen Peter.

(28)　a. أعطى أحمدُ إلى محمدٍ الكتابَ　　(Goal)　　　　　(Theme)

　　　a'ta　　　ahmed-u　　　ela　　mohammed-in　　alkitaab-a

　　　gave　　　Ahmed-Nom　　prep　Mohammed-Gen　　the book-Acc

　　　'Ahmed gave the book to Mohammed.'

b. أعطى أحمدُ الكتاب محمدًا   (Theme)   (Goal)

a'ta	ahmed-u	alkitaab-a	mohammed-an
gave	Ahmed-Nom	the book-Acc	Mohammed-Acc

'Ahmed gave Mohammed the book.'

More precisely in English, the Goal argument must c-command the Theme argument. This claim is supported by several observations made by Barss & Lasnik (1986). One is that a polarity item which is the Theme argument can be licensed by a negative Goal, as illustrated in (29a) and (30a) but not conversely, as illustrated in (29b) and (30b):

(29)   a. I showed nothing to anyone.   (Theme > Goal)
        b. *I showed anything to no one.

(30)   a. I gave no one anything.   (Goal > Theme)
        b. *I gave anyone nothing.   Barss & Lasnik (1986: 350)

The second of Barss & Lasnik's observations (1986) is that the Goal argument can serve as the antecedent of the Theme anaphor, as exemplified in (31a) and (32a) below, but not vice versa, as exemplified in (31b) and (32b):

(31)   a. Marianne showed Paul to himself.   (Theme > Goal)
        b. *Marianne showed to himself Paul.

(32)   a. Marianne showed Paul himself.   (Goal > Theme)
        b. *Marianne showed himself Paul.

Furthermore, a quantifier within a Goal argument can bind a pronoun inside a Theme argument, but the converse does not hold, as shown in the following examples:

41

(33)   a. I showed every boy to his mother.   (Theme > Goal)

       b. *I showed his mother to every boy.

(34)   a. Martha gave every teacher his booklet.   (Goal > Theme)

       b. *Martha gave its owner every booklet.

It can be concluded that the NP compulsorily is followed by the PP in the PD construction, and the Goal argument in the DOD construction c-commands the Theme argument.

2.3.2 Semantic features

A semantic interpretation has been proposed by Pinker (1989) in Learnability and Cognition: the acquisition of argument structure to draw linguistic attention to why several dative verbs are allowed to occur in the DOD construction while others are not. The proposal indicates that the dative alternation is the ability to be expressed into two various 'thematic cores' which are characterised in the following diagram:

Table 2. Characterises the thematic cores of dative verbs	
The PD structure	The DOD structure
'X caused Y to go to Z' is realised as the PD form.	'X caused Z to have Y' is realised as the DOD form.

The BRRs is a primary proposal was suggested by Pinker (1989) to allow that the PD construction 'X caused Y to go to Z' to alternate to the DOD construction 'X caused Z to have Y' when the given verb can apply to the causation of change of possession. Yet, being applied to the BRRs is necessary for the given verb to allow the DOD structure but is not sufficient enough to govern 'negative exceptions', as illustrated in (35) and (36):

(35)   *Abel pushed Owen a box.

(36)   *Emma whispered Aileen the news.

It is easy to imagine an occasion in which someone is pulling a box to someone else leading to that person's possessing the box or an occasion in which whispering a secret to someone else leading to that person's possessing or knowing the secret. Regarding to the BRRs, examples such as those illustrated in (35) and (36) should be grammatically well-formed but they are not.

A consequence of the insufficiency of the BRRs to convert the PD structure to the DOD structure, the NRRs application was proposed by Pinker (1989) to solve such problem. This application suggests a satisfactory explanation for a verb to occur the DOD structure. As suggested, verbs are categorised into a number of categories, certain of them alternating and others non-alternating. Example (37b) is acceptable as 'throw' belongs to verbs of instantaneous causation of ballistic motion, which is an alternating class. However, example (38b) is unacceptable for the reason that 'push' is a verb of continuous causation of accompanied motion in some manner, which is a non-alternating class. Therefore, verbs must express a ballistic motion and not a continuous motion with a continuous imparting of force in order to alternate.

(37)   a. Ellis threw the pen to Peter.
        b. Ellis threw Peter the pen.

(38)   a. Abel pushed a box to Owen
        b. *Abel pushed Owen a box.

Pinker argued that verbs such as 'throw' permit the DOD construction since the event involved expresses ballistic motion as in (37b). On the other hand, 'push' is not allowed to occur in the DOD structure, as exemplified in (38b) because it implies a continuous motion and a continuous imparting of force.

Moreover, example (39b) is well-formed since 'tell' is a member of an alternating verb class which is verbs of communication class. On the other hand, example (40b) is ill-formed owing to the fact that 'whisper' is considered as a member of a non-alternating verb class which is verbs of manner of speaking. Thus, verbs must not specify the manner of speaking to occur in the DOD construction.

(39)　　a. Tom told the story to the child.
　　　　b. Tom told the child the story.

(40)　　a. Emma whispered the news to Aileen.
　　　　b. * Emma whispered Aileen the news.[1]

In the example (39), the verb 'tell' implies merely the act of transmitting the story to the child. Nevertheless, the verb 'whisper' in (40) expresses a manner of speaking and that prevents it from alternating.

2.3.2.1 The animate possessor constraint

It has been suggested that the DOD construction is restricted to a condition which is that the Goal argument should be animate and a 'projected possessor' of the Theme argument (Green 1974; Oehrle 1976; Goldsmith 1980; Bresnan 1982; Mazurkewich & White 1984; Pinker 1989; Jackendoff 1990; Pesetsky 1995; Harley 1995, 2002). This constraint can be seen in the following examples:

(41)　　a. Ann sent the book to Alison.
　　　　b. Ann sent Alison the book.

---

[1] This example is accepted by some native speakers of English.

(42)   a. Ann sent the book to Jeddah.

       b. * Ann sent Jeddah the package.

(43)   a. Dale sent the book to his son.

       b. Dale sent his son the book.

(44)   a. Dale sent the book to the border.

       b. * Dale sent the border the book.

The animate possessor restriction illustrates the disparities between (41) and (42) and between (43) and (44). The DOD construction is grammatically well-formed in (41b) since 'Alison', unlike 'Jeddah', is able to act as a potential possessor of 'the package', whereas in (42b) 'Jeddah' may be simply interpreted as the endpoint of the motion of 'the book' but not as a 'projected possessor'. The PD construction, as shown in (41a) and (42a), is acceptable with either 'Alison' or 'Jeddah' since not only 'Alison' but also 'Jeddah' can be understood as the endpoint of the movement of 'the book' or the physical location where 'the book' went to. The variability between examples (43) and (44) also has the identical explanation of the possessor restriction, which can be applied to the DOD construction but not to the PD construction.

So far, all DOD instances that have been presented satisfy the possessor restriction. Specifically, the possession and the animacy are observed in all the DOD examples illustrated thus far. As long as such an observation is concerned, it is almost certain to hold the view that the animacy restriction is assumed. Moreover, it should be argued that such restriction might be an extremely fundamental condition for the possessor restriction.

However, regardless of widespread support for this argument, some researchers argued that the Goal argument sometimes is not an animate recipient. The examples in (45) were provided to support their argument. These examples are cited from Oh (2010: 410):

(45)   a. We gave the house a fresh coat of paint.

        b. We gave the house a new roof.

Among those researchers who support the claim that the Goal argument can be sometimes an inanimate recipient is Goldberg (1995) who presented a few examples that apparently violate the animacy restriction. Her argument is that due to the fact that the affective meaning has been received by the inanimate recipients in (46), it may be argued that such sentences are well-formed in English.

(46)   a. The paint job gave the car a higher sale price.

        b. The Tabasco sauce gave the baked beans some flavour.

        c. The music lent the party a festive air.   Goldberg (1995)

The previous examples (45) and (46) obviously display the absence of the animacy restriction on the DOD structure. It could be argued that the possessor restriction is the heart of the semantic constraint on the DOD structure. It is likely that the animate restriction is a result of the possessor restriction to the extent that the animacy condition is respected for the DOD sentences where the referent of the first object is animate. The animacy restriction has been assumed in the DOD structure due to the widespread appearance of its Goal argument in an animate case which may legalize the inanimate goal in the DOD structure, which is probably rare.

2.3.2.2 The physical movement restriction

It is a vital role of the PD construction to indicate 'directed motion'. That is, it illustrates an event in which the Theme argument moves from the Agent to the Goal argument. This movement denoted by the PD construction, is known as 'physical transfer' (Green 1974; Oehrle 1976; Gropen et al 1989; Pesetsky 1995; Richards 2001; Harley 2002). The physical movement is an essential element in the PD structure in which the *to*-PP is employed. Such a structure

denotes the physical movement for the Theme argument from the Agent to the Goal argument. The following examples are presented by numerous researchers (Pesetsky 1995; den Dikken 1995; Harley 2002).

(47)   a. The revolution gave the country a new government.
       b. *The revolution gave a new government to the country.

(48)   a. The war years gave the journalist a new perspective.
       b. *The war years gave a new perspective to the journalist.

(49)   a. We gave the house a new roof.
       b. *We gave a new roof to the house.

The ungrammatical PD sentences in the above examples are due to the failure of 'direct movement'. Thus, the Recipient of the Theme argument must be a physical entity so as to be transferred by the preposition 'to'. The unacceptability of the PD constructions in (47b) and (48b) are attributed to impossibility of transferring the Theme argument 'government' and 'perspective' in these examples. Likewise, the Theme argument 'the roof' in (49) has to move from the Agent to the Goal in order to be acceptable.

2.3.2.3 The differences between the PD and DOD constructions

The PD construction and the DOD construction seem to be semantically different from each other. The differences can be observed in many aspects. One of which is that the DOD construction, but not the PD construction, may possibly be related to a causative meaning (Oehrle 1976; Larson 1988; Pinker 1989; Gropen et al. 1989; Harley 1995; Pesetsky 1995; Richards 2001; Pylkkänen 2002).

(50)   a. The article gave me a headache.

        b. *The article gave a headache to me.   Miyagawa & Tsujioka (2004:2)

As can be understood from example (50a), reading the article caused the headache. The causative interpretation is impossible to be expressed in the PD construction, as shown in example (50b).

The second semantic difference between these two constructions is that regarding to a number of researchers, the animate goal sometimes is a necessary condition in the DOD structure whereas it is not in the PD structure. Therefore, the inanimate goal phrase does not appear in the DOD construction but in PD construction it does (Bresnan 1982; Mazurkewich & White 1984; Pinker 1989; Harley 1995; Pesetsky 1995)

(51)   a. I sent the boarder/*the border a package.

        b. I sent a package to the boarder/the border.   Miyagawa & Tsujioka (2004:2)

The animate Goal 'the boarder' is allowed to occur in the DOD construction but the inanimate Goal 'the border' is not allowed, as illustrated in (51a) whereas both of them are permissible with the PD structure as (51b) shows. Such a difference caused by the necessity of the Goal of the DOD construction to be a possessor of the Theme. On the other hand, in the PD construction, the Goal argument should consider as the final point of the Theme's movement (Mazurkewich & White 1984). As discussed in the previous section, the Goal argument in the DOD structure should usually be animate; if the Goal is inanimate, the implication of the sentence should be interpreted as an animate, as exemplified in (46). Such distinctions in argument realisation of the dative alternation have resulted in a variety of underlying constructions for the structures (Marantz 1993; Harley 1995; Pylkkänen 2002).

Thirdly, the DOD structure often implies a meaning of completion which possibly will be absent in the PD structure. This disparity can be clarified by Green (1974) who mentioned that an intuition that (52a) may possibly take place although 'the pupils' may not learn 'English'; while the interpretation of example (52b) proposes that 'the pupils' learned it. Likewise, (53b) indicates that Alison caught the ball, while (53a) can be interpreted that Alison is the spatial target.

  (52)   a. Paul taught English to the pupils.
         b. Paul taught the pupils English.

  (53)   a. Heather threw the ball to Alison.
         b. Heather threw Alison the ball.

A further semantic disparity between the dative structures noted by Green (1974) is that the Goal argument in the DOD construction, unlike in the PD construction, should exist. The illustrative example of this disparity can be seen in (54):

  (54)   a. Alex told his sorrows to God.
         b. Alex told God his sorrows.

It can be understood from example (54a) that God does not exist and it may be uttered by nonbeliever in God. However, the interpretation of (54b) must entail the existence of God.

To sum up, the semantic proposals: the BRRs and the NRRs are successively proposed by Pinker (1989) to solve the issue of why some verbs are syntactically allowed to occur in the DOD structure, while others are not allowed. The DOD structure is restricted by the animate possessor. Moreover, the physical movement is a vital condition for the PD structure.

2.4 Theoretical background: properties of the dative alternation in Arabic

2.4.1 Syntactic features

As discussed above in verb classes, a variety of Arabic verbs permit what is known as the dative alternation, as exemplified in the pair of sentences in (55). Example (55a) shows the Arabic PD structure and example (55b) illustrates the Arabic DOD structure. Dative verbs in Arabic are verbs which appear with two objects that cannot form by themselves a separate verbless sentence. This definition was built on the base of the relationship between the two internal arguments of the dative sentence. In other words, the relationship between the indirect object (the Goal argument) such as 'Ali' in example (55b) and the direct object (the Theme argument) such as 'the book' in example (55b) does not have to be like the relationship between the subject and its complement in case of verbless sentence. The direct object 'the book' in (55b) cannot be the complement of the subject in a sentence such as *Ali (is) the book.

(55) a. أعطى عمرُ الكتابَ إلى عليٍ   (Theme)   (Goal)

     a'ta   omar-u   alkitaab-a   ela   ali-in

     gave   Omar-Nom   the book-Acc   prep   Ali-Gen

     'Omar gave the book to Ali.'

     b. أعطى عمرُ عليًا الكتابَ   (Goal)   (Theme)

     a'ta   ahmed-u   ali-an   alkitaab-a

     gave   Omar -Nom   Ali -Acc   the book-Acc

     'Omar gave Ali the book.'

To show the structures of the PD as in (55a) and the DOD as in (55b), I will assume that the direct and the indirect objects are base generated inside the VP projection, the former occupies an intermediate position of VP while the latter occupies the complement of the VP. This can be supported by the VP-Internal Subject Hypothesis which is formulated by Koopman & Sportiche (1988). They assumed that the subject of the simple clause is generated in the specifier of the VP whereas the objects are generated inside the VP. Therefore, the PD structure as in (55a), the

direct object 'the book' adjoins to V' and the indirect object 'to Mohammed' has its own PP projection below the V. Similarly, the DOD structure as in (55b) has the indirect object 'Mohammed' adjoins the V' and the direct object 'the book' is in the lowest position of the clause structure. The verb merges in the V and then moves to the T position via the *v* while the subject merges in the spec-VP and moves to the spec-*v*P to receive the nominative case with the T 'gave', as shown in structure (56a & 56b).

(56)   a. The tree of the Arabic BPD structure

TP
├── T
│   gave
└── *v*P
    ├── DP
    │   Ahmed
    └── *v*'
        ├── *v*
        │   ~~gave~~
        └── VP
            ├── DP
            │   ~~Ahmed~~
            └── V'
                ├── DP
                │   the book
                └── V'
                    ├── V
                    │   ~~gave~~
                    └── PP
                        ├── P
                        │   to
                        └── DP
                            Mohammed
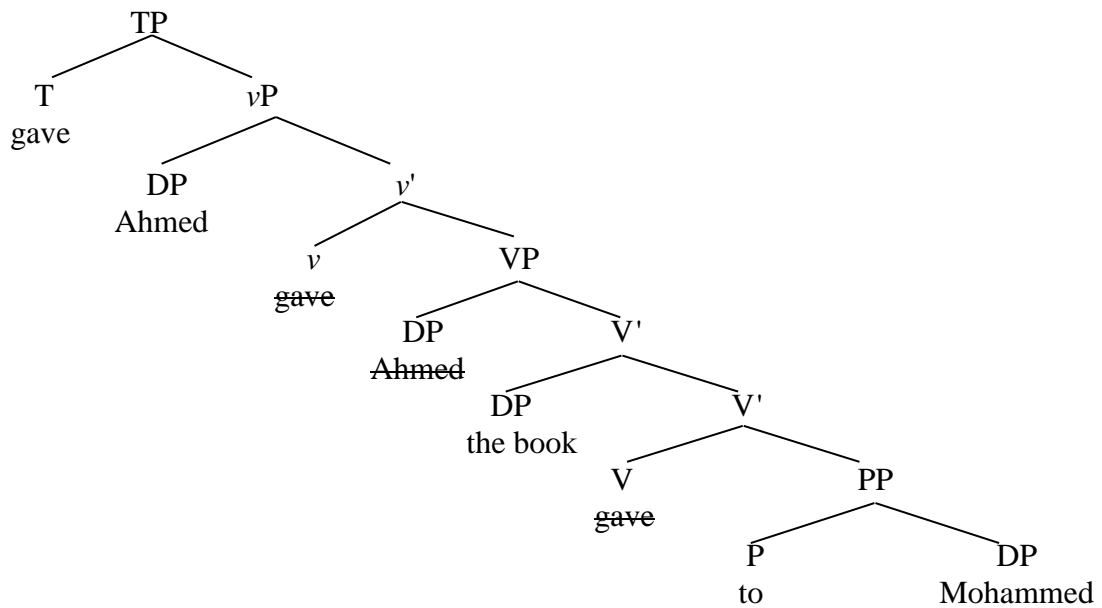
b. The tree of the Arabic BDOD structure

```
                    TP
            ┌────────┴────────┐
            T                 vP
          gave        ┌────────┴────────┐
                      DP                v'
                    Ahmed        ┌───────┴───────┐
                                 v               VP
                               g̶a̶v̶e̶        ┌──────┴──────┐
                                          DP             V'
                                        A̶h̶m̶e̶d̶     ┌──────┴──────┐
                                                 DP            V'
                                              Mohammed   ┌──────┴──────┐
                                                         V            DP
                                                       g̶a̶v̶e̶      the book
```
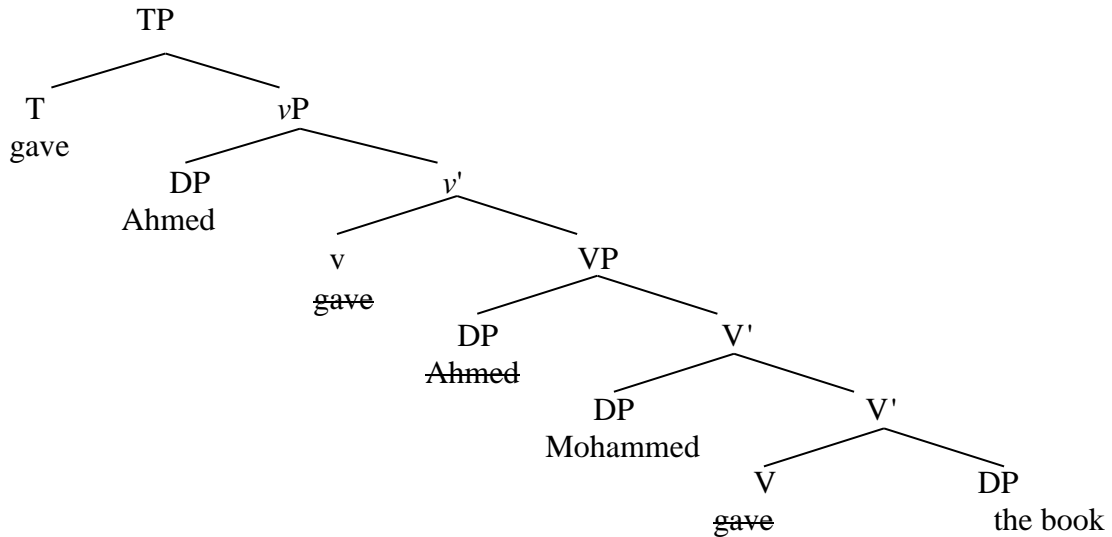
The Arabic DOD structure's arguments and the Theme argument in the PD structure are marked by accusative case. However, the Goal argument in the PD structure is marked by the genitive case since it is prefixed by benefactive/allative preposition *ela* 'to'. Therefore, the final case marker can be a fundamental element in allowing Arabic to have a great deal of freedom between the two internal arguments: the Goal and the Theme. This means that SD constructions are grammatically well-formed. Numerous Arabic grammarians, for instance, Sibawayh (1988), Ibn S-Saraaj (1996), Hassan (1974) and Al-Oqaili (1985) argued that the Goal/Theme order in (55) is the basic, and the Theme/Goal order, as illustrated in (57) is derived by scrambling. Thus, the examples in (55) show what will be called the basic structures and the examples in (57) illustrate what will be referred to as the scrambling structures. These grammarians also argued that the scrambling structure is not as widespread as the basic structure.

(57) a. أعطى أحمدُ إلى محمدٍ الكتابَ   (Goal)   (Theme)

a'ta	ahmed-u	ela	mohammed-in	alkitaab-a
gave	Ahmed-Nom	prep	Mohammed-Gen	the book-Acc

'Ahmed gave the book to Mohammed.'

b. أعطى أحمدُ الكتاب محمدًا   (Theme)   (Goal)

a'ta	ahmed-u	alkitaab-a	mohammed-an
gave	Ahmed-Nom	the book-Acc	Mohammed-Acc

'Ahmed gave the book Mohammed.'

The indirect object 'to Mohammed' in the SPD as in (3a) as well as the direct object in the SDOD 'the book' as in (3b) must raise and land in a position higher than the direct object 'the book' and the indirect object 'Mohammed' respectively. Meanwhile, the subject which is in spc-*v*P should be higher than both moved objects. Therefore, the indirect object in the SPD structure as in (3a) and the direct object in the SDOD structure as (3b) move to the edge of *v*P while the subject adjoins the out edge of the *v*P. The fronted movement of the objects is motivated by the edge feature in *v* heads of the *v*P phase (Chomsky 2005). He proposed that phase heads C and *v* are endowed with the Edge feature (EF) which requires C, *v* to attract elements to their edge CP, *v*P as he applied it to the movement of the *wh*-phrase to spec-CP by the EF of the head C. Examples (5a & 5b) show the diagrams of the SD structures.

(58)   a. The tree of the Arabic SPD structure
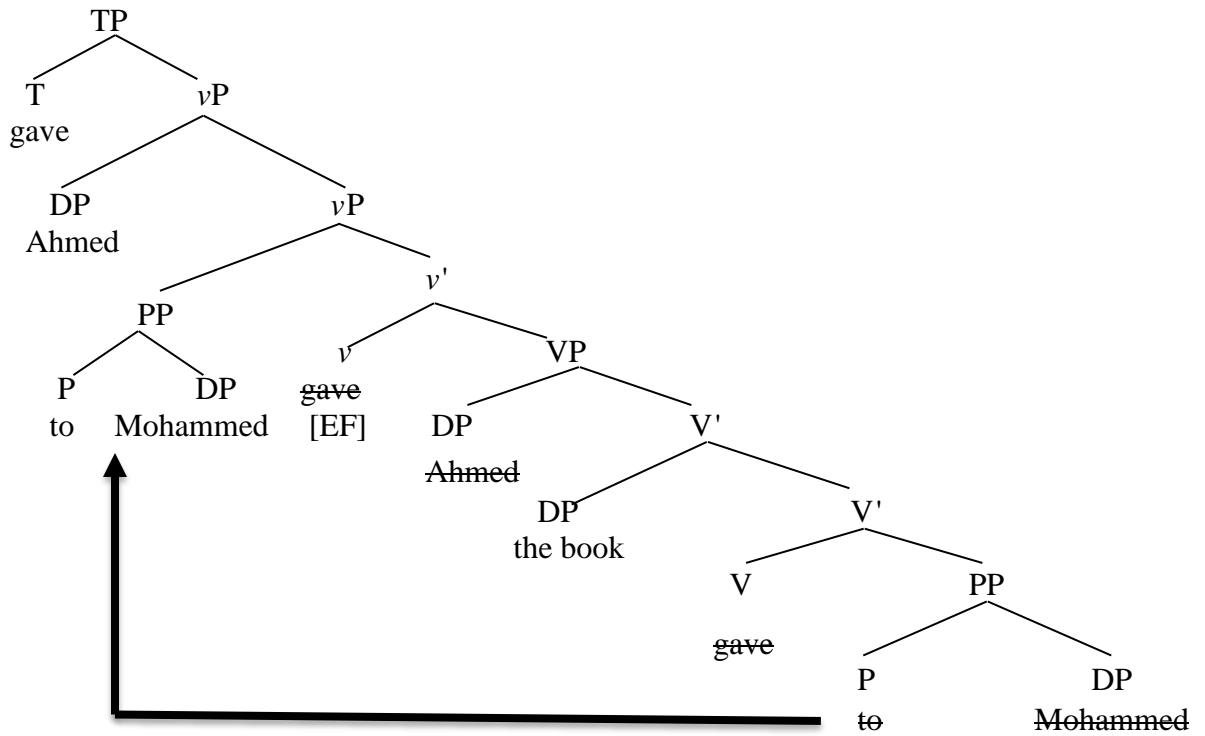
b. The tree of the Arabic SDOD structure
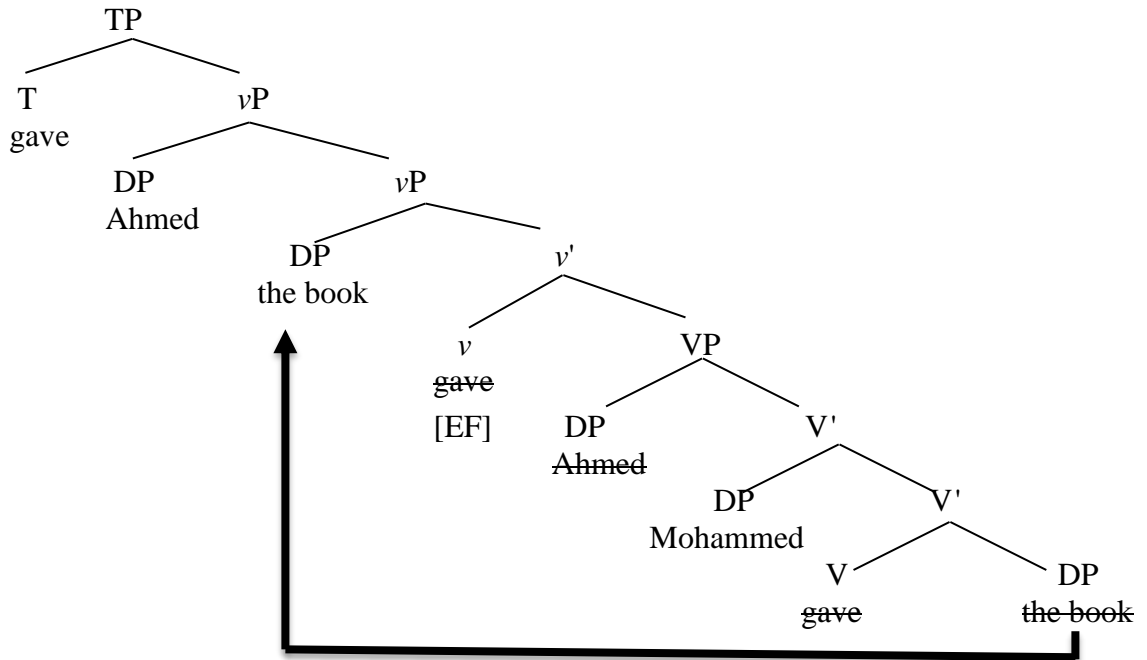
However, what is obvious with regard to SD structures is that non-alternating verbs such as the equivalent of 'kick' are not allowed to occur in the SDOD structure but are permissible in the SPD construction as in the following example:

(59) a. ركلَ أحمدُ إلى محمدٍ الكرةَ   (Goal)   (Theme)

rakala   ahmed-u   ela   Mohammed-in   alkorat-a

kicked   Ahmed-Nom   prep   Mohammed-Gen   the ball-Acc

'Ahmed kicked the ball to Mohammed.'

b. ركلَ أحمدُ الكرةَ محمدًا   (Theme)   (Goal)

*rakala   ahmed-u   alkorat-a   mohammed-a

kicked   Ahmed-Nom   the ball-Acc   Mohammed-Acc

'Ahmed kicked the ball Mohammed.'

The basic structure in Arabic is supported by a number of arguments. First, when both the Goal argument and the Theme argument are animate expressions, and pragmatic factors cannot be used to determine which is which, the first of the two complements must be interpreted as the Goal, and the second as the Theme, as shown in (60) (Al-Oqaili 1985):

(60)   أعطى أحمدُ ياسرًا خالدًا   (Theme)   (Goal)

a'ta   ahmed-u   yasser-an   khalid-an

gave   Ahmed-Nom   Yasser-Acc   Khalid-Acc

'Ahmed gave Yasser Khalid.'

In the above example, 'Yasser' has to be interpreted as the Goal argument and not the Theme argument; on the contrary, 'Khalid' must be interpreted as the Theme argument not as the Goal argument.

The second argument is when the indirect object is a personal pronoun and the direct object is a noun as can be observed in (61a), the Theme argument cannot precede the Goal argument, as (61b) illustrates (Hassan 1974):

(61) a. أخبرتُكَ السرَ

   axbar-tu-ka   alser-a

   told-I- you   the secret-Acc

   'I told you the secret.'

   b. أخبرتُ السرَ أنت

   *axbar-tu   alser-a   anta

   told-I   the secret-Acc   you

   'I told you the secret.'

As shown in (61a) a pronoun Goal argument must precede the noun Theme argument. Otherwise, the Arabic sentence is ill-formed as in (61b).

An additional supporting argument is provided by Ouhalla (1994) who argued that the Goal argument is positioned higher than the Theme argument. He built his argument from antecedent-variable binding, as exemplified in (62) and quantifier-pronoun binding, as exemplified in (63).

(62) a. أعطى صالحٌ الكتابَ لصاحبِه   (Theme)   (Goal)

   a'ta   šaleh-un   alkitaab-a   li   šaaħib-i-hi

   gave   Saleh-Nom   the book-Acc   prep owner-Gen-his

   'Saleh gave the book to his owner.'

   b. أعطى صالحٌ سالمًا كتابه   (Goal)   (Theme)

   a'ta   šaleh-un   salem-an   kitaab-a-hu

   gave   Saleh-Nom   Salem -Acc   book-Acc-his

   'Saleh gave Salem his book.'

c. أعطيتُ لصاحبِه الكتابَ (Goal) (Theme)

*a'tay-tu li šaaħib-i-hi alkitaab-a

gave-I prep owner-Gen-his the book-Acc

'I gave its owner the book.'

d. أعطيتُ كتابَه سالمًا (Theme) (Goal)

*a'tay-tu kitaab-a-hu salem-an

gave-I kitaab-Acc-his Salem-Acc

'I gave Salem his book.'

(63) a. أعطى سعدٌ مالَه لكلِ أولادِه (Theme) (Goal)

a'ta saad-un mal-a-hu li kull-a 'aolad-i-hi

gave Saad-Nom money-Acc-his prep all-Acc children-Gen-his

'Saad gave his money to all his children.'

b. أعطى سعدٌ كلَ عاملٍ راتبَه (Goal) (Theme)

a'ta saad-un kull-a 'aamel-in ratib-a-hu

gave Saad-Nom all-Acc worker-Gen salary-Acc-his

'Saad gave each worker his salary.'

c. أعطى سعدٌ لكلِ أولادٍ مالَه (Goal) (Theme)

* a'ta saad-un li kull-i 'aolad-in mal-a-hu

gave Saad-Nom prep all-Gen children-Gen money-Acc-his

'Saad gave his cheque to each worker.'

d. (Goal) أعطيتُ عاملَه كل راتبٍ (Theme)

*a'tay-tu 'aamel-a-hu kull-a ratib-in

gave-I worker-Acc-his each-Acc salary-Gen

'I gave his worker each salary.'

As can be observed in the previous two examples, in the PD structure, the Goal argument *šaaħib-i-hi* 'his owner' binds a possessive pronoun, the Theme argument *alkitaab-a* 'the book' must precede the Goal argument, as shown in (62a), though the converse is ungrammatical, as (62c)

shows. However, in the DOD structure, if the Theme argument *kitaab-a-hu* 'his book' binds a possessive pronoun, it has to follow the Goal argument (Salem), as in (62b). Otherwise, the structure is ungrammatical as (62d) illustrates. That is, any Arabic argument binds a passive pronoun must be preceded, as in (62a) and (62b). Identically, as in (63a) the basic structure is grammatical since the quantifier *kull-a 'aolad-i-hi* 'all his children' is the Goal argument and the Theme argument *mal-a-hu* 'his money' binds a possessive pronoun. However, the converse is ungrammatical as (63c) shows. Moreover, in (63b) the BDOD structure is grammatical given that the Goal argument *kull-a 'aamel-in* 'each/every worker' is quantified and the Theme argument *ratib-a-hu* 'his salary' hosts a passive pronoun and the opposite is ungrammatical, as shown (63d).

Furthermore, this pattern of acceptability is supported when the Theme and the Goal arguments are *wh*-phrases, as observed in (64):

(64) a. لمن أعطيتَ ماذا؟   (Goal > Theme)

        li   man   a'ṭay-ta   maażaa

        pre who   gave-you   what

        'Who did you give what?'

      b. مَنْ أعطيتَ ماذا؟   (Goal > Theme)

        man   a'ṭay-ta   maażaa

        who   gave-you   what

        'Who did you give what?'

      c. ماذا أعطيتَ لمن ؟   (*Theme > Goal)

        maażaa   a'ṭay-ta   li   man

        what   gave-you   prep   who

        'Who did you give what?'

d. ماذا أعطيت مَنْ؟   (*Theme > Goal)

  * maaẓaa   a'ṭay-ta   man

  what   gave-you   who

  'Who did you give what?'

In the examples above, the Goal and the Theme arguments are *wh*-phrases. It is grammatical for the *wh*-Goal argument to c-command the *wh*-Theme argument as (64a) and (64b) demonstrate. The converse does not hold as demonstrated in (64c) and (64d). As Barss & Lasnik (1986) proposed, the difference between the grammatical sentences as in (64a) and (64b) and the ungrammatical sentences as in (64c) and (64d) can be accounted for along the following lines. The extraction of the *wh*-Goal argument does not violate the Superiority Condition (Chomsky 1973) which states that if a movement can be applied to two arguments in the structure, it is necessarily applied to the argument that is superior. Thus, the Goal is located higher than the Theme. On the other hand, the extraction of *wh*-Theme violates the Superiority Condition by virtue of the lower position of Theme in relation to the Goal.

A further supporting argument for the basic structure is found in the reciprocal pronoun construction. In the PD structure, *kull* 'each' is the Theme argument which is followed by a NP and *alaaxar* 'the other' is the Goal argument which is preceded by a NP. In the DOD structure, *kull* 'each' is the Goal argument which is followed by a possessor NP and *alaaxar* 'the other' is the Theme which is preceded by a possessed NP. This can be observed in the following examples:

(65) a. أعطيتُ كلَ طفلٍ لأمِ الآخرِ   (Theme)   (Goal)

     a'tay-tu   kull-a   tifl-in   li   aom-i   alaaxar-i

     gave-I   each-Acc   child-Gen   prep mother-Gen the other-Gen

     'I gave each child to the other's mother.'

b. (Theme)   (Goal) أعطى أحمدُ كلَ طالبٍ كتابَ الآخرِ

   a'ta   ahmed-u   kull-a   talib-in   kitaab-a   alaaxar-i
   give   Ahmed-Nom   each-Acc   student-Gen book-Acc   the other-Gen
   'Ahmed gave each student the book of the other.'

c. (Theme)   (Goal) أعطيتُ لأمِ الآخرِ كلَ طفلٍ

   *a'tay-tu   li   aom-i   alaaxar-i   kull-a   tifl-in
   gave-I   prep   mother-Gen   the other-Gen each-Acc   child-Gen
   'I gave to the other's mother each child.'

b. (Goal)   (Theme) أعطى أحمدُ كتابَ الآخرِ كلَ طالبٍ

   *a'ta   ahmed-u   kitaab-a   alaaxar-i   kull-a   talib-in
   give   Ahmed-Nom   book-Acc   the other-Gen each-Acc   student-Gen
   'Ahmed gave the book of the other each student.'

As shown in (65a), the grammaticality of such sentence due to the appearance of the Theme argument *kull* 'each' followed by the NP *tifl-in* 'child' and the Goal argument *alaaxar* 'the other' preceded by the NP *aom-i* 'mother'. The converse is ungrammatical, as shown in (65c). However, in (65b) the Goal argument *kull* 'each' appears followed by the NP *talib-in* 'student' and the Theme argument *alaaxar* 'the other' appears preceded by the NP *fašl-a* 'classroom'. Thus, such sentence is grammatical and the reverse order is ungrammatical as (65d) shows.

The final supporting argument for the basic structure mentioned by Al-Oqaili (1985) is the case of the exceptive phrase. In the PD structure, the Goal argument is positioned after an exceptive particle. That is the Goal argument is excluded from the general statement as produced in (66a). However, in the DOD structure, the Theme argument is expressed after an exceptive particle. That means the Theme argument is not included in the general statement as produced in (66b).

(66) a. لم يعطِ الرجلُ الكتابَ إلا للولدِ   (Theme > Goal)

lam	yu-a't'-i	lrajul-u	alketaab-a
Neg	imp-give-Jus[2]	the man-Nom	the book-a
ila	li	alolad-i	
except	prep	the boy-Gen	

'The man gave the book only to the boy.'

b. لم يعطِ الرجلُ الولدَ إلا الكتابَ   (Goal > Theme)

lam	yu-a't'-i	lrajul-u	alolad-a	ila
Neg	imp-give-Jus	the man-Nom	the boy-Acc	except
alketaab-a				
the book-a				

'The man gave the boy only the book.'

c. لم يعطِ الرجلُ إلاالكتابَ للولدِ   (*Theme > Goal)

*lam	yu-a't'-i	lrajul-u	ila	alketaab-a
Neg	imp-give-Jus	the man-Nom	except	the book-a
li	alolad-i			
prep	the boy-Gen			

'The man gave only the book to the boy.'

---

[2] This form is called the jussive in which imperfect verbs take no vowels at all, and if the verb ends in one of suffixes (ون، ان، ين), the final (ن) is deleted. Imperfect verbs take the jussive when they are preceded by one of the following situations: After the negative particle *lam*, after the imperative *lām* prefix, after a prohibition (negative imperative) with the particle *lā*, as the result of an imperative or in conditional clauses.

d. لم يعطِ الرجلُ إلا الكتابَ الولدَ   (*Theme > Goal)

*lam	yu-a't'-i	lrajul-u	ila	alketaab-a
Neg	imp-give-Jus	the man-Nom	except	the book-a

alolad-a

the boy-Acc

'The man gave only the book the boy.'

In the previous example, the exceptive phrase *li alolad-i* 'to the boy' in (66a) must c-command the Theme argument *alketaab-a* 'the book' due to the exclusion of the Goal argument from the general statement and the exceptive phrase *alketaab-a* 'the book' in (66b) has to follow the Goal argument *alolad-i* 'the boy' since this Theme argument is excluded from the general statement. Therefore, the exceptive phrase must be preceded and be the final argument. However, the converses do not hold as in (66c) and (66d).

However, a question might be raised if the Theme argument precedes the Goal argument obligatorily. The Theme argument must precede the Goal argument as in the following cases: first when the Goal argument is expressed after an exceptive phrase. Since the Goal argument follows the exceptive phrase, as exemplified in (67):

(67)   a. ما أعطيتُ لزيدٍ إلا الكتابَ   (Goal > Theme)

ma	a'tay-tu	il	zaid-in	ila	alkitaab-a
Neg	gave-I	pre	Zaid-Gen	except	the book-Acc

'I gave to Zaid only the book.'

b. ما أعطيتُ الكتابَ إلا زيدًا   (Theme > Goal)

ma	a'tay-tu	alkitaab-a	ila	zaid-an
Neg	gave-I	the book-Acc	except	Zaid-Acc

'I gave the book only Zaid.'

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c. ما أعطيتُ إلا لزيدٍ الكتابَ   (*Goal > Theme)

    *ma   a'tay-tu   ila   il   zaid-in   alkitaab-a

    Neg   gave-I   except   pre   Zaid-Gen the book-Acc

    'I gave only to Zaid the book.'

d. ما أعطيتُ إلا زيدًا الكتابَ   (*Goal > Theme)

    *ma   a'tay-tu   ila   zaid-an   alkitaab-a

    Neg   gave-I   except   Zaid-Acc   the book-Acc

    'I gave only Zaid the book.'

As can be seen from examples in (67), the exceptive phrases *alkitaab-a* 'the book' as in (67a) and 'Zaid' as in (67b) are preceded, since they are excluded from the statement and have to be the final argument in the sentence. Otherwise the expressions are ungrammatical, as illustrated in (67c) and (67d).

A further case of the obligatory use for the scrambling structure is where the PD Theme argument has a resumptive pronoun co-referential to the Goal argument. Furthermore, the SDOD structure is only grammatical where the Goal argument has a resumptive pronoun co-referential to the Theme argument. These arguments can be clearly illustrated in the following examples:

(68) a. أعطى سلطانُ لعمرَ مالَه   (Goal)   (Theme)

    a'ta   sultan-u   li   omar-a   mal-a-hu

    gave   Sultan-Nom   prep   Omar-Gen   money-Acc-his

    'Sultan gave Omer his money.'

b. أعطى سلطانُ المالَ مالكَه   (Theme)   (Goal)

    a'ta   sultan-u   almaal-a   malik-a-hu

    gave   Sultan-Nom   the money-Acc   owner-Acc-its

    'Sultan gave the money its owner.'

c. أعطى سلطانُ لمالِكِه المالَ		(Goal)		(Theme)
*a'ta	sultan-u	li	malik-i-hi	almaal-a
gave	Sultan-Nom	prep	owner-Gen-its	the money-Acc
'Sultan gave to its owner the money.'				

d. أعطيتُ مالكَه المالَ	(Goal)		(Theme)
*a'tay-tu		malik-a-hu	almaal-a
gave-I		owner-Acc-its	the money-Acc
'I gave its owner the money.'			

The grammaticality of (68a) due to the occurrence of the Theme argument *mal-a-hu* 'his money' following the Goal argument 'Omar' since the Theme argument binds the clitic pronoun 'his' that is co-referential with the Goal argument. On the other hand, the unacceptability of (68c) is referred to the preceding of the Goal argument *malik-i-hi* 'its owner' the Theme argument *almaal-a* 'the money'. The pronoun in the Goal argument must not precede its antecedent. Moreover, as exemplified in (68b), the Goal argument *malik-a-hu* 'its owner' follows the Theme argument *almaal-a* 'the money' since it has a clitic pronoun (its) which is co-referential with the Theme argument. Thus example (68b) is a grammatically good sentence of Arabic. However, the opposite such as in (68c) is unacceptable in Arabic. The examples of (68c) and (68d) are grammatically ill-formed owing to the impossibility for the pronoun to precede its antecedent.

The final case where the Goal argument has to follow the Theme argument is when the Goal argument is a lexical NP and the Theme argument is a pronoun, as shown in (69):

(69)	a. الكتابُ أعطيتُه لأنورَ		(Theme > Goal)
	alkitaab-u	a'tay-tu-hu	il	anwar-a
	the book-Nom	gave-I-it	prep	Anwar-Gen
	'The book, I gave it to Anwar.'			

b. الكتابُ أعطيتُه أنورَ   (Theme > Goal)

alkitaab-u	a'ṭay-tu-hu	anwar-a
the book-Nom	gave-I-it	Anwar-Acc

'The book, I gave it Anwar.'

c. الكتابُ أعطيتُ لأنورَ إياه   (*Goal > Theme)

*alkitaab-u	a'ṭay-tu	il	anwar-a	eyahu
the book-Nom	gave-I	prep	Anwar-Gen	it

'The book, I gave it to Anwar.'

d. الكتابُ أعطيتُ أنورَ إياه   (*Goal > Theme)

*alkitaab-u	a'ṭay-tu	anwar-a	eyahu
the book-Nom	gave-I	Anwar-Acc	it

'The book, I gave it to Anwar.'

The Goal argument must follow the Theme argument since it is a lexical NP 'Anwar' and the Theme argument is pronoun, as shown in (69a) and (69b). However, if the Goal argument precedes the Theme argument, the sentence will be unacceptable, as shown in (69c) and (69d).

The discussion in this section has shown several circumstances where the Goal argument and the Theme argument are obligatorily ordered. Out of these circumstances, the SD structures are alternative, as exemplified in (57). It might be worth repeating that Arabic varies significantly from English regarding the word order since Arabic allows the SD constructions but English does not.

2.4.2 Semantic features

In Arabic alternating verbs, the Goal argument must be an animate in order to become the 'prospective possessor' or 'benefactive recipient' of the Theme argument (Pinker 1989; Gropen et al. 1989). The notion of possession includes possession of information.

(70) a. باعَ إسماعيلُ المنزلَ لفيصلٍ

ba'a	ismail-u	almanzi-a	li	faisal-in
sold	Ismail-Nom	the house-Acc	prep	Faisal-Gen

'Ismail sold the house to Faisal.'

b. باعَ إسماعيلُ فيصلَ المنزلَ

ba'a	ismail-u	faisal-a	manzil-a
sold	Ismail-Nom	Faisal-Acc	a house-Acc

'Ismail sold Faisal a house.'

(71) a. درسَ المعلمُ التاريخَ لهاشمٍ

darrasa	almu'alm-u	attarix-a	li	hashem-in
taught	the teacher-Nom	the history-Acc	prep	Hashem-Gen

'The teacher taught history to Hashem.'

b. درس المعلمُ هاشمًا التاريخَ

darrasa	almu'alm-u	hashem-an	attarix-a
taught	the teacher-Nom	Hashem-Acc	the history-Acc

'The teacher taught Hashem history.'

In the example (70) 'Faisal' is a potential possessor of the house. Likewise, in example (71) 'Hashem' will potentially have some information about the historical subject. Therefore, these examples follow the animacy constraint. However, the Recipient has to be a potential animate possessor in the DOD construction but not in the PD construction. Al-Sadoon (2011) proposed that this animacy constraint is supported by the fact that P_{HAVE} encodes possessive relations for which the possessor must be animate, whereas P_{LOC} encodes locative relations which do not need any animacy restriction. The following examples demonstrate this phenomenon.

(72)   a. أعطيتُ الهديةَ للطالبِ/ للمدرسةِ

a'ṭay-tu	alhadiyat-a	li	ṭṭalib-i/mmadrast-i
gave-I	the gift-Acc	prep	the student-Gen/the school-Gen

'I gave the gift to the student/the school.'

b. أعطيتُ الطالبَ/المدرسةَ هديةً

a'ṭay-tu	alṭṭalib-a/*almmadrast-a	hadiyat-an
gave-I	the student-Acc/*the school-Acc	a gift-Acc

'I gave the student/* the school a gift.'

In contrast, numerous verbs do not dativise even though their Goal argument is the 'possessor' or 'benefactive recipient' of the Theme argument as in example (73):

(73)   a. ركلَ أحمدُ الكرةَ إلى محمدٍ

rakala	ahmed-u	alkorat-a	ela	mohammed-n
kicked	Ahmed-Nom	the ball-Acc	prep	Mohammed-Gen

'Ahmed kicked the ball to Mohammed.'

b. ركلَ أحمدُ محمدًا الكرةَ

*rakala	ahmed-u	mohammed-a	alkorat-a
kicked	Ahmed-Nom	Mohammed-Acc	the ball-Acc

'Ahmed kicked Mohammed the ball.'

Being applicable in BRRs is sufficient but not necessary in order to dativise. Oehrle (1976) argued that semantic criteria are not enough to account for the dative shift in English. Correspondingly, Pinker and Gropen, et al, were not satisfied with the BRRs. Such a problem was tackled by Pinker's (1989) application in which he classified verbs semantically into several classifications known as the NRRs. Some of these classifications can occur in the DOD structure whereas the rest cannot. Having applied such a classification to Arabic verbs, it could be revealed that certain Arabic verb classes are possibly applied to the NRRs and allowed to occur

in the DOD structure such as a number of verbs in acts of giving verbs class, as exemplified in (15) and type of communication verbs class, as shown in (18).

A concern that may be raised is that why certain Arabic verb classes do not dativise even though their counterparts in English do. A well-known instance is the ballistic motion verbs class, as exemplified in (73). Hamdan (1997) argued that in additional to the general semantic features the Agent and the Goal argument with alternating verbs should simultaneously participate in the action as will be explained in the following section.

2.4.2.1 A simultaneous participation in the act

The underlying semantic analysis of Arabic alternating verbs, for illustration, *a'ta* 'give' and *akbara* 'tell' both the Agent and the Goal argument essentially participate in the act, as the following example:

(74)   أعطى عليٌّ خالدًا كتابًا

    a'ta   ali-un   khalid-an   kitaab-an

    gave   Ali-Nom   Khalid-Acc   a book-Acc

    'Ali gave Khalid a book.'

In the above example both 'Ali' and 'Khalid' simultaneously participate in the act of giving the book. The image of this action is that Ali handed the book to Khalid and said that 'the book is for you.' On the other hand, Ali accepted the book either by receiving the book physically or indicating the acceptance verbally. In such situation, it can be said that Ali gave Khalid the book. However, if the involvement in the action did not occur, it may not be truly said that Ali gave Khalid the book.

The concept of the simultaneous participation between the Agent and the Goal argument in the DOD construction was highlighted by Ibn S-Saraaj (1996) who advocated that the meaning of the following example should be understood as 'Abdullah gave and Zaid took.'

(75)   أعطى عبدُ اللهِ زيدًا درهمًا

a'ta	abd-u Allah-i	zaid-an	dirham-an
gave	Abd-Nom Allah-Gen	Zaid-Acc	dirham-Acc

'Abdullah gave Zaid a dirham.'

Moreover, the implication of example (76) is that Zaid received a dirham. As was mentioned by Al-Rajhi (2000) that Arabic linguistic scholars such as Sibawayh (1988) argued that the Goal argument indeed can be the subject and the Theme argument is understood as the object, as shown in the following example:

(76)   استلمَ زيدٌ درهمًا

istalma	zaid-un	dirham-an
received	Zaid-Nom	dirham-Acc

'Zaid received a dirham.'

Al-Rajhi (2000) also added by referring to Sibawayh that the Goal argument can equivalently be expressed in a genitive case, as exemplified in (77):

(77)   أعطى عبدُ اللهِ درهمًا لزيدٍ

a'ta	abd-u allah-i	dirham-an	li	zaid-in
gave	Abd-Nom Allah-Gen	dirham-Acc	prep	Zaid-Gen

'Abdullah gave a dirham to Zaid.'

On the other hand, for non-alternating verbs, it may be said that the semantic equivalents of verbs of instantaneous causation of ballistic motion and verbs of continuous causation of

accompanied motion in some manner cannot occur in the DOD construction in Arabic for the reason that these verbs do not require that the object in motion necessarily hit or reached the end point. That is, it seems that the simultaneous participation in the action, to great an extent, entails 'attainment' between the Theme and the Goal arguments. This statement may be supported by the fact that the DOD construction is not grammatical when the object in motion does not hit or reach the end point, as shown in example (78):

(78)   a. رميتُ زيدًا القلمَ لكنه لم يصلْه

* rama-tu   zaid-an   alqalam-a   lakann-hu   lam   yašil-l- hu

threw-I   Zaid-Acc   the pen-Acc   but-it   Neg   Imp-reach-Jus-him

'I threw Zaid the pen but it did not reach him.'

b. رميتُ القلمَ إلى زيدٍ لكنه لم يصلْه

rama-tu   alqalam-a   ela   zaid-in   lakann-hu   lam

threw-I   the pen-Acc   prep   Zaid-Gen   but-it   Neg

yašil-l-hu

Imp-reach-Jus-him

'I threw the pen to Zaid but it did not reach him.'

It may be widely agreed that the simultaneous participation in the act mentioned previously is very significant for dativisation. If a verb lacks this feature, it will not dativise even though the Agent and the Goal argument deliberately arrange the involvement between them in the act. This is illustrated in (79):

(79)   a. أرسلتُ الكتابَ إلى عيدٍ بعدما طلبه

arsal-tu   alkitaab-a   ela   eid-in   ba'dama   talaba-hu

sent-I   the book-Acc   prep   Eid-Gen   after   he had requested-it

'I sent the book to Eid after he had requested it.'

b. أرسلت عيدًا الكتابَ بعدما طلبه

* arsal-tu	eid-an	alkitaab-a	ba'dama	talaba-hu
sent-I	Eid-Acc	the book-ACC	after	he had requested-it

'I sent Eid the book after he had requested it.'

However, those verbs that naturally need a simultaneous involvement of both the Agent and the Goal argument in the act can only be used when the involvement in the act is presented. Observe the examples below:

(80)   a. أطعمَ عليٌّ سعدًا خبزًا

at'ama	ali-un	saad-an	xabaz-an
fed	Ali-Nom	Saad-Acc	a bread-Acc

'Ali fed Saad a piece of bread.'

b. أطعمَ عليٌّ سعدًا خبزًا لكنه لم يأكلْه

* at'ama	ali-u	saad-an	xabaz-an	lakann-hu
fed	Ali-Nom	Saad -Acc	a bread-Acc	but- he
lam	yakul-°-hu			
Neg	Imp-eat-Jus-it			

'Ali fed Saad a piece of bread but he did not eat it.'

c. أطعم عليٌّ الخبزَ لسعدٍ لكنه لم يأكله

* at'ama	ali-un	alxabaz-a	li	saad-an	lakann-hu
fed	Ali-Nom	the bread-Acc	prep	Saad-Acc	but-he
lam	yakul-hu				
Neg	Imp-eat-Jus-it				

'Ali fed a piece of bread to Saad but he did not eat it.'

Examples (80b) and (80c) are unacceptable since the simultaneous participation between the Agent and the Goal argument is denied.

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In contrast, there is a set of verbs that do not alternate because they do not involve the direct participation of the Agent and the Goal argument, even though these verbs belong to classes that meet the general semantic criteria. Examples of this are provided in (81):

(81) a. كتبَ سويلمُ سمرَ رسالةً

       * kataba   swelam-un   samar-a   risalat-an

       wrote   Swulam-Nom   Samar-Acc   a letter- Acc

       'Swulam wrote Samar a letter.'

    b. دفعَ ياسرٌ طلالًا درهمين

       * dafa'a   yasser-un   talal-an   dirhamain

       paid   Yasser-Nom   Talal-Acc   two dirhams

       'Yasser paid Talal two dirhams.'

These verbs simply do not allow the DOD structure.

To conclude, it has been argued that the Goal argument in the Arabic dative alternation should be animate. A further necessary condition for the Arabic dativisation is that the Agent and the Goal argument must simultaneously participate in the act as mentioned by Hamdan (1997).

2.5 Summary

This chapter has shown that the dative alternation is allowed in both English and Arabic with several disparities between them. One disparity is that English allows a wider range of verbs to occur in the DOD structure more than Arabic does. English allows all verbs in the act of giving class, type of communication class and the ballistic motion class to appear with the DOD structure. Nonetheless, Arabic only allows some verbs in act of giving class and type of communication class to alternate. This means that some verbs in these two classes cannot occur in the DOD structure such as 'pay', 'read' and 'write'.

The second disparity is that English does not allow the SD structures, as exemplified in (27), whereas Arabic allows them, as shown in (28).

Chapter 3 The acquisition of argument structure

3.1 Introduction

This chapter aims to show the phenomenon of learners' acquisition of argument structure by examining five hypotheses: the FDH, the RDH, the Subset-Superset Hypothesis, the FT/FA approach and the FRH. It then addresses a brief summary of certain previous studies that investigated the acquisition of the dative alternation in L1 and L2 acquisition. Finally, the research topics are presented.

3.2 The phenomenon of learners' acquisition of argument structure

The phenomenon of the vital role of L1 influence on the acquisition of L2 has been widely recognised by both practicing language teachers and L2 researchers for decades. Specifically, the role of the mother tongue in the L2 learning has been a major concern in applied linguistics inquiries for some time now. It is also admitted that to obtain a deep understanding of this role, theories of language and of language learning that are not limited to surface structural descriptions may be required, as L1 influence on the acquisition of L2 will possibly reside beyond what meets the eye. The focus of the L2 acquisition research is not only the prediction and elimination of difficulties and errors but also intended to gain a full understanding of the very nature of L2 acquisition as a cognitive process, and the psycholinguistic mechanisms operating in it. It has been assumed that knowledge of L1 is a crucial cognitive element in shaping the process of L2 acquisition.

The current study will be concentrating upon certain conceptual factors which are theoretically considered as universal primitives, even though expressing such factors in vocabulary and syntactic configurations differs cross-linguistically. The concerns that will be investigated are to what extent L1 plays an important role in the acquisition of L2 and whether positive and

negative evidence have an influence on the acquisition of the Arabic and English dative alternation.

It is worth looking at some theoretical concerns which are associated with the acquisition of L1 and L2; these are the phenomena of transfer, positive and negative evidence. L1 and L2 acquisition vary from one another in various characteristics, that is, the initial and the ultimate outcomes. L1 learners, on one hand, attain a native-like performance; adult L2 learners, on the other hand, to some extent may not have native-like performance in many aspects (Johnson & Newport 1989; Bley-Vroman 1989; Birdsong 2005; Lardiere 2007). Albeit L2 learners have a native-like grammar, a non-native accent may remain. In terms of the start of the initial state of acquisition of L1, no agreement has been reached among L1 acquisition researchers. However, it is a widely held view by L2 acquisition researchers such as Schwartz & Sprouse (1996) that the initial state of L2 acquisition is the L1 grammar. Moreover, other researchers such as Lefebvre, White & Jourdan (2006) claim that the L1 influence will remain even to advanced L2 learners unless they are provided with positive evidence to enable them to develop their language.

The role which L1 plays in the acquisition of L2 is very debatable. White (2000) summarised a variety of different theoretical arguments regarding L1 transfer and the ability to access UG. One argument states that L1 structures are fully transferred to the L2 grammar during the initial state in the acquisition of L2 and L2 learners have full access to UG (e.g., Schwartz & Sprouse 1996). A second view indicates that the acquisition of L2 is identical to the acquisition of L1, thus, the L1 has no impact on the L2 acquisition; and UG is fully accessible to L2 learners (e.g., Flynn 1996). Third, L1 and L2 learners identically access UG and L2 learners' initial stage grammar represents certain parts of the L1 grammar (e.g., Eubank 1994; Vainikka & Young-Scholten 1996). Fourth, L2 learners partially access UG and their initial stage grammar commences with some L1 grammatical properties (e.g., Eubank et al. 1997). Finally, L2 learners only have access to UG principles which have been activated during the L1 acquisition and they start their L2 with the L1 grammar (e.g., Schachter 1989, 1996).

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The assumption that implicit and even metalinguistic knowledge of the mother tongue (or of another non-native language) is at least one important cognitive factor impinging on the process of L2 learning can be in fact regarded as an almost intuitive notion. After all, unlike children picking up their mother tongue, L2 acquisition takes place among people who are already speakers of a given language. L2 learners definitely do not start development of communicative capacity through language from scratch.

Schachter (1993) points out that the knowledge of L1 may have a deterministic role in configurations of the hypotheses that will be consciously or unconsciously entertained by L2 learners in relation to their target language input. In other words, speakers of a given language come to the task of learning a new language equipped with a cognitive blueprint–their previous experience as language speakers–that predisposes them to presume the possible shapes a language can take. On the one hand, this cognitive blueprint may prove misleading, making learners resist internalising structural properties that are crucial to the establishment of a native-like grammar of L2, in case such properties fail to correspond to the internalised knowledge of language bestowed by the learner's linguistic experience in his or her L1. On the other hand, as discussed in Odlin (1989) and Corder (1993), it can actually be an important learning asset, as cross-linguistically shared properties may facilitate internalisation of subtle grammatical features.

It was pointed out by Juffs (2000) that interlanguage studies that investigate the phenomenon of L1 influence on the L2 acquisition development have had a salient concentration upon firmly morpho-syntactic issues. The focus of Liceras (1989) and Xavier (2006) has been on divergent settings of the pro-drop parameter and Christie & Lantolf (1998) focused on pronoun and anaphor binding. Nevertheless, as demonstrated by Juffs (2000) and White (2003), recently, the interest of L2 acquisition researchers in investigating L1 influences on L2 learning has concentrated on L2 representations of argument structure, in other words, matters of semantic representations in L2 grammar.

Most studies in the field of the acquisition of L2 argument structure have broadly concentrated on the way that L2 learners acquire the knowledge of the mappings between semantic representations of predicators and the syntactic configurations such predicators will take part in, along with the accompanying constituents that will be required for full grammaticality to be achieved. The problem of L2 development of representations of argument structure can be explicitly posed in the terms of Juffs' (2000) question (which focuses upon how English can be acquired as L2):

'[I]f learners of English as a second language know that both *fall* and *drop* mean 'to move downwards', do they also know that 'the apple fell to the ground', 'the apple dropped to the ground', and 'Sandy dropped the apple' are possible English sentences, but '*Sandy fell the apple' is not?' (2000: 187)

With regard to Juff's (2000) inquiry, it might be indicated that there are a couple of research questions in the investigation of L2 development of argument realisation. The first question is whether L2 learners are mentally able to represent verbs as belonging to classes marked by association with semantic features that may guide the mapping between the meanings of such verbs and morpho-syntax. The second question is whether learners can form broad generalisations about verb types and constructional meanings, so that they are able to know that occurrences of some predicators in certain constructions are grammatically acceptable.

A well-known instance of this argument is the study carried out by Montrul (2001). This is a study that investigated the way in which English agentive verbs of manner of motion like 'walk', 'jump' and 'march' can be acquired by Spanish learners. In English, such verbs are allowable to occur in the intransitive/transitive alternations, as exemplified in the following examples:

(82) a. The soldiers marched.
      b. The captain marched the soldiers to the tents.   Montrul (2001:174)

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From the above examples, it is apparent that the verb 'march' can occur in an intransitive construction as in (82a), where its sole argument is semantically marked as Agent. Instead, as example (82b) shows, the verb 'march' can appear in a transitive construction where the basic overall meaning comes to be causation, the causer argument 'the captain' having been mapped to the syntactic subject and the causee argument 'the soldiers' to the direct object. In other words, the alternating construction seems to be attached to an event conceptualised as composed by two sub-events: causation and the soldiers' march itself. This transitivity alternation can be defined as a caused motion alternation.

It was reported by Ritter & Rosen (1998) cited by Montrul (2001) that there are clear semantic constraints in operation with respect to such an alternation. It is the PP 'to the tents', as illustrated in (82b) or other sign of an end point which seems crucial for acceptability, as for the alternation to be licensed there must be a reading that evokes telicity of the depicted event. The event can be interpreted as atelic (a plausible reading for example 82), the alternation would not have been licensed, as illustrated in (83):

(83)   *The captain marched the soldiers.   Montrul (2001:174)

Montrul (2001) investigated the influences of L1 on the acquisition of L2 by looking at how native speakers of Spanish and Turkish who were learning English acquire the transitivity alternations. More specifically, she intended to probe whether L1-induced overgeneralisations or undergeneralisations would occur. English and Spanish differ in the range of syntactic constructions in which they express verbs of motion. The grammar of English has a wider range of possible constructions compared to the grammar of either Spanish or Turkish with regard to the expression of manner of motion verbs. Therefore, the cognitive task facing a learner of L2 Spanish whose L1 is English, for instance, would be to restrict the scope of his or her interlanguage representation. Contrastively, the cognitive task facing an English L2 learner whose mother tongue is Spanish is to achieve knowledge of the semantic features that will allow generalisation of a construction new to his or her previous linguistic experience.

It might be argued that L1 transfer will possibly be motivated by a partial fit between L1 and L2 argument structures (Adjémian 1983; White 1991; Inagaki 2001, 2002), and this is very interesting for the current study due to the fact that there is indeed a significant partial fit between the Arabic and English dative alternation, as will be discussed in chapter 4. Any learner acquiring L2 has to be provided with positive evidence so as to reach a high level of proficiency in the target language; however, certain constructions will not be acquired without providing L2 learners with negative evidence which is information about the ungrammaticality of some structures. An experimental study that is considered to be evidence in support of this statement was carried out by White (1991). She found that English learners accepted the DOD structure in French as grammatical when it is not. She suggested that such L2 learners needed to be provided with negative evidence in order to know which constructions are ungrammatical. This study will be further discussed in the next subsection.

A further piece of evidence for the importance of negative evidence is due to Inagaki (2001) who investigated the acquisition of manner of motion verbs in a bidirectional study of Japanese native speakers acquiring English and native speakers of English learning Japanese. Japanese has a narrow range of structures that expresses the motion events. English allows the occurrence of manner of motion verbs with goal PPs such as *Peter ran into the hotel*. Japanese, unlike English, does not allow such syntactical expression. It was shown that Japanese learners could realise from positive evidence that manner of motion verbs can occur with goal PPs in English, while native speakers of English learning Japanese found it challenging to unlearn that manner of motion verbs are not allowed to appear with goal PPs in the target language (Japanese), as nothing in the input will inform them so.

Additionally, Birdsong (1987) observed that negative evidence exists but it cannot be easily measured or quantified in daily life and the classroom teaching. He (1987: 4) stated:

'In L2, the occurrence of negative evidence may depend on learning content. In traditional formal classroom settings there is an abundance of explicit negative evidence in the form of overt corrections. In naturalistic contexts, and in classrooms that try to approximate such contexts, explicit corrections may be infrequent, but there is no lack of what Berwick would call tacit negative evidence, falling under the categories of indirect metalinguistic information proposed by Schachter 1966.'

Furthermore, the effectiveness of the availability of negative evidence to L2 learners relies on their metalinguistic awareness which is associated with literacy. He also claimed that uneducated learners are hardly able to detect negative evidence. He also added that the use of negative evidence is a matter of individual and/or situational variation. What is more, the study of Montrul & Bowles (2008) confirmed that it will be quite challenging to study experimentally the influence of negative evidence in the acquisition of L2. They examined transfer in manner and path in L2 Spanish. The subjects of this study were 13 heritage speakers and 12 native speakers of Spanish. These participants were presented with positive and negative evidence regarding the Differential Object Marking (DOM) rules which refer to the possible use of the Spanish preposition *a* for accusative. The findings of the study were not definite owing to the failure to differentiate between the grammatical attainment led from positive evidence and from that due to negative evidence. It is also very hard to measure and quantify the impact of positive evidence given that both the curricular and extracurricular positive evidence will possibly have an impact on the end stage of L2 acquisition. Exposure to L2 possibly will consist of various resources, for example, living with native speakers (host family), reading stories, novels, magazines and newspapers, watching TV or online learning such as YouTube.

Based on the discussion above, the phenomenon of negative evidence is fundamentally significant for L2 learners. However, the problem is that teachers sometimes cannot explicitly make negative evidence by presenting ill-formed examples. Generally, negative evidence is unavailable to L2 learners owing to their unawareness of ungrammatical sentences unless L2

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learners are acquiring the language in a classroom and the teachers correct the mistakes explicitly.

As previously discussed, it could be assumed compatibly with White & Jourdan (2006) that L1 has an influence on the acquisition of L2 when there is no positive evidence in the input and that negative evidence is not really available to the learners to their L2 grammar. In the circumstance of the L2 acquisition of the dative alternation in English and Arabic, L1 transfer ought to be shown in a variety of constructions for which L2 acquirers (Arab learners of English and English learners of Arabic) cannot certainly find positive evidence in the L2. The collected data from the bidirectional study will be discussed based on four hypotheses: the FDH, the RDH, the Subset-Superset Hypothesis and the FT/FA approach. These four hypotheses can be collapsed into two main sections: the inability of accessing UG and the ability of accessing UG.

3.3 Second language acquisition theories

Despite the number of SLA theories, the current data will be analysed according to four hypotheses: the FDH, the RDH, the Subset-Superset Hypothesis, the FT/FA approach and the FRH. These four hypotheses based on the prediction of the current study collapse in two sections: the impossibility of acquiring absent structures in L1 and the possibility of acquiring absent structures in L1.

3.3.1 The impossibility of acquiring absent structures in L1
3.3.1.1 The Fundamental Differences Hypothesis

The FDH was formulated by Bley-Vroman (1989, 1990), who stated that L2 learners cannot access UG due to the domain-specific linguistic mechanisms and UG is only available in early childhood. Consequently, those who start to acquire L2 during adulthood can only access the principles of UG which are presented in their L1 and instead deploy domain-general problem

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solving skills. Hence, L2 learners will not achieve a native-like performance. The L1 acquisition fundamentally varies from the acquisition of L2. The fundamental disparity between them is that the first step of the L1 acquisition may be realising the parametric values specific to the target grammar and followed by setting the parameters in accordance with the internal grammatical representations 'a domain-specific mechanism'. On the other hand, the acquisition of L2 starts by relying on general problem solving skills in order to interpret the grammatical construction of the L2 input consciously. Due to the inconsistency of L2 learners' aptitude in occupying the general problem solving skills, it was argued by the FDH that the ultimate attainment of the L2 learners is not only less morpho-syntactically native-like proficiency but also less uniform among them than that of L1 acquisition. What is more, L2 learners can indirectly access UG via the L1 grammar. Consequently, they can, to a great extent, project the specific parameter settings of the L1 onto the L2 grammar. Unlike children, nonetheless, they are only capable of setting parameters to values instantiated in their mother tongue. The FDH also indicates fossilisation, which is generally understood to mean the cessation of acquiring some language knowledge. Fossilisation is considered to be one of the key aspects which prevents L2 learners from native-like performance.

In the past two decades a number of studies have sought to confirm that L2 learners cannot access UG and are not able to acquire structures that are not allowed in their L1. A well-known example is a study which was carried out by Bley-Vroman & Yoshinaga (1992) who investigated how learners of Japanese, based on Pinker's theory, acquire the NRRs for the dative alternative present in English. These researchers formulated their assumption based on the FDH and argued that adult learners of L2 would use only a narrow range of verb types if relevant distinctions can be found within their L1; however, these adult L2 learners would neglect to use these verb types in their sentences if pertinent differences were not apparent in their L1. The study endeavoured to assess through this design whether the participants were aware of the NRRs and the verb classifications, and if they would therefore, employ the NRRs by accepting the corresponding DOD if the verb belonged to an alternating subclass, and rejecting this method if the verb was a member of non-alternating verb class. It was revealed that Japanese speakers

could not distinguish the grammaticality of the corresponding DOD construction relaying on a specific narrow range verb class since the narrow range verb classes do not exist in Japanese. The methodology of this study and its results are further described in the following subsection.

A further study investigated the role of domain-general learning in L2 acquisition, carried out by Dekeyser (2000) who, examined the FDH by concentrating on age influences on the end-state of English morpho-syntax and analytical verbal ability. This research aimed firstly to examine the FDH which predicted that:

> 'Those adults who appear to be successful at learning a second language will necessarily have a high level of verbal ability.' (Dekeyser 2000: 501)

Secondly, it sought to duplicate Johnson & Newport's (1989) study which revealed that the ultimate attainment in L2 acquisition was associated with the age of the acquisition for children who acquired the L2 before reaching 17. However, adult L2 learners scored lower than children acquirers, but with sizeable exceptions some adult L2 learners scored within the childhood range.

The hypotheses of Dekeyser (2000) were formulated as follows: firstly participants will display a negative correlation between their age of arrival and their performance on a grammaticality judgment test, but then with certain partial fit between children and adult learners. Second, adult learners who score nearly similar to children learners may well have a great verbal ability, which may possibly have permitted them to acquire the L2 grammar. Finally, a variety of aspects of grammar possibly will reveal various correlations with age of acquisition since not all constructions are correspondingly sensitive to the influences of the critical period.

A total of 57 native speakers of Hungarian were recruited to take part in this study. 42 of them were classified as adult learners and the rest were classified as children learners. Besides the background questionnaire which concerned the participants' mother tongue, educational background, age of arrival in North America and age at the time of the test, the participants had to fill out two instruments: first the grammaticality judgment test which is a modified version

of Johnson & Newport's (1989) test. The test was modified by deleting and reorganising some subcategories. Moreover, certain structures were added to be problematical items for Hungarian participants. A total of 91 grammatical and 97 ungrammatical items were investigated. The second instrument involved language learning aptitude and was adaption of Carroll & Sapon's (1959) questionnaire. The questionnaire was composed of 20 five-way multiple-choice items.

The findings revealed a very negative connection between the participant's age of arrival and the results on the grammaticality judgment test. Child participants performed like native speakers or nearly so regardless of their verbal aptitude score. On the other hand, only adult participants who were above-average on verbal aptitude acted similarly to the native speakers in the grammaticality judgment task. Moreover, the finding provided evidence for the FDH by revealing that adult learners did not reach native-like proficiency level in the L2 morpho-syntax, except for those who could depend on explicit, analytic, problem solving capacity.

On the other hand, the contrasting view to the previous hypothesis is the ability to access UG which indicates that adult L2 learners can indeed partially access UG. One of these hypotheses is the RDH which was proposed by Hawkins (2003) which will be addressed extensively the next subsection.

3.3.1.2 The Representational Deficit Hypothesis

An additional hypothesis argues that L2 learners cannot fully access UG and cannot acquire structures that are absent in their L1. This is the RDH formulated by Hawkins (2003, 2005) according to which L2 learners cannot acquire functional categorises or features that do not exist in the L1 grammar, suggesting fossilisation. It also predicts that the underlying representation of the L2 ultimately maintained is not native-like due to a deficit relating to L1 transfer and the partial access to UG. What may possibly be understood is that L2 acquisition to some extent is incomplete whenever the L2 grammar necessitates the acquisition of certain formal features that

are not acquired during childhood, at least the uninterpretable features which are pure syntactic features such as nominative case on a nominal or an agreement marking on a verb. Therefore, L2 inconsistency might be described by arguing that an impossible deficit in syntactic representation results in surface variability.

A great deal of previous research in the acquisition of L2 has adopted the RDH to investigate the acquisition of certain syntactic features such as gender and number features of nouns to indicate that L2 learners only have the ability to access linguistic features that are available in the L1 grammar (e.g. Hawkins 1998, 2001; Franceschina 2001, 2005; Hawkins & Franceschina 2004). This is exemplified in an experimental study undertaken by Franceschina (2001, 2005) who investigates data in a case study on Martin, a native speaker of English learning Spanish who has been supposed to achieve a high proficiency level in Spanish. She found that this learner reached nearly native-like performance in gender assignment on nouns; nonetheless, he revealed substantial unpredictability with gender assignment on determiners and adjectives, preferring a masculine default. She also found that Martin had native-like performance in the acquisition of number assignment across nouns, determiners and adjectives. This is due to the fact that the learner's L1 allows grammatical number, but not grammatical gender. This finding (the variability in morphological performance) was interpreted as evidence for the impossibility of acquiring a new feature in the L2.

It seems that Franceschina's (2005) findings are compatible with a number of previous studies such as Hawkins (1998, 2001) and Hawkins & Franceschina (2004) which indicated that native speakers of English learning Spanish certainly vary from native speakers of Spanish in terms of the mental representation of grammatical gender. This result was presented by them as primary proof for the claim that L1 and L2 vary in terms of the speakers' ability to access representation resources after the Critical Period.

Several attempts thus far have been made to examine the use of the RDH approaches. Instances of these studies are Fernandez (1999); De Garavito &White (2002); White et al. (2004); Cabrelli

et al. (2008). Fernandez (1999) indicates that the L2 acquisition of gender assignment with adjectives is more challenging than gender assignment with determiners. An additional experimental study was undertaken by De Garavito & White (2002) who explored how native speakers of French acquire grammatical gender in Spanish. They conducted a comparative investigation between three hypotheses: the Local Impaired Hypothesis (LIH) which was formulated by Beck (1998), the Failed Feature Hypothesis (FFH) which was formulated by Hawkins & Chan (1997) and Full Access Hypothesis (FAH). Three hypotheses made predictions where the L1 and the L2 coincide features and feature strength. With respect to the LIH, variability in noun-adjective order is predicted which contrasts with FAH. With regard to the FFH, it will not be difficult for the L2 learners when both the L1 and the L2 realise gender since it is available in L1. Advance leaners whose L1 lacks the gender features will not acquire such features. On the other hand, L2 learners whose L1 has gender should not have difficulty in acquiring such features since their L1 has such features even those at low proficiency levels. Therefore, the French learners ought not to perform such problems and such learners are expected to perform differently from native speakers of English learning Spanish. Regarding to the FAH, variability is not predicted. The availability of gender features in the L2 when they are instantiated in L1; the FAH is not different from the FFH due to the availability of the gender features to French learners of Spanish. However, the FAH contrasts with the FFH in terms of the unavailability of the gender in the L1. That is, the FAH does not expect the disparity in the acquisition of gender relying on whether or not the gender is instantiated in L1. Variability between such learners is not expected since such problems are related to the acquisition of gender and cannot be assigned to the presence or the absence of gender in the mother tongue of these learners. In consequence, they do not indicate the representational deficit. The researchers also revealed that French learners who were majoring at the intermediate level failed to acquire the assignment of gender with adjectives more than with determiners, comparable to Fernandez's (1999) contribution. Nonetheless, they argued that such a challenge will be overcome by reaching the advanced level. They also argued that the difficulty in the acquisition of L2 gender is not related to the absence of such a feature in the L1 as argued by the FFH. Since the French learners had some difficulties in the acquisition of gender assignment in L2 Spanish

even though such features exist in their L1. With objective of comparative investigation of learners who at same proficiency level and whose L1 lacks gender with learners whose L1 has gender, White et al (2001) investigated the acquisition of Spanish gender by native speakers of English (lacks gender features) and French (has gender features) on a comprehension task involving gender and number features. Examples to show the gender and number in Spanish are illustrated in (84). The result shows that regardless of the L1 background, all the advanced participants' performance was not significantly different from the native speakers. These findings led these researchers to claim that the LIH and the FFH are invalid, since these hypotheses argue that inconsistencies have to remain. Accordingly, Bruhn de Garavito & White (2002) summed up by claiming that the problem is morphological owing to the similarity of performance between the English and French learners of Spanish.

(84) a. el   sombrero   negro
          the-masc.sing   hat-masc.sing   black-masc.sing
          'The black hat.'

       b. la   chaqueta   negra
          the-fem.sing   jacket-fem.sing   black-fem.sing
          'The black jacket.'

Further study that were conducted to prove that the grammatical gender is acquired by English native speakers learning Spanish were carried out by White et al. (2004) and Cabrelli et al. (2008). These studies found out that N-drop (null nouns) is acquired by English learners of Spanish. According to the RDH, such Spanish syntactic features are almost uncertainly acquired by English native learners since gender features from adjectives and determiners are uninterpretable and are not available in L1.

An extra proposal concerning the acquisition of argument structure is the Subset-Superset Hypothesis which was suggested by White (1991) on which the next subsection will concentrate.

3.3.2 The possibility of acquiring absent structures in L1

3.3.2.1 The Subset-Superset Model
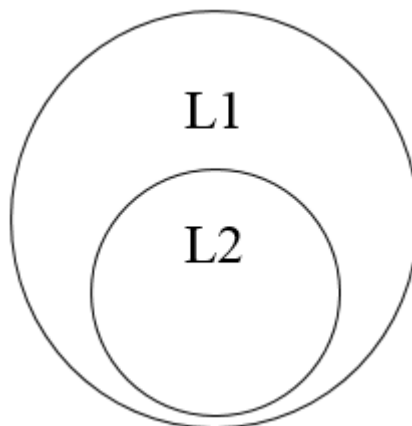
Figure 1. Superset L1 - subset L2

A partial fit between the L1 and the L2 properties possibly will cause difficulties for L2 learners. White (1991) suggested a couple of circumstances based on this claim. Firstly, the case may occur where certain L2 argument structure properties are less wide than their L1 counterparts, as observed in Figure 1. She argued that this case creates difficulty in the L2 acquisition. If there is a partial overlap between L1 and L2, L1 grammar might be transferred, and all positive constructs L2 learners attain could be in accordance with the grammatical rules of both L1 and L2. Hence, in order to restructure from the L1 to the L2, it is necessary to provide L2 learners with negative evidence.

This situation was supported by a number of L2 acquisition studies such as White (1987, 1991); Juffs (1996); Izumi & Lakshmanan (1998); Inagaki (2001, 2002). A well-known example of this is the study carried out by White (1987) who investigated how English native speakers acquire the dative alternation in French. English allows both the PD form and the DOD form, as exemplified respectively in (85). Nonetheless, only the PD form is permitted to occur in French as can be seen in (86a). She found that English speakers faced difficulty in unlearning

the DOD construction in French, since this construction is permitted in their L1 but not in the L2.

(85)   a. John gave the book to Mary.
       b. John gave Mary the book.

(86)   a. Jean   a donné   le livre   á   Marie
          John   gave   the book   to   Mary
          'John gave the book to Mary.'
       b. *Jean   a donné   Marie   le livre
          John   gave   Mary   the book
          'John gave Mary the book.'

As can be seen from the above examples, English permits more dative constructions than French. This may cause difficulty for English learners, who should be aware that the DOD construction is not allowed in French. It was found that English learners, after being exposed to French for a while, still used the DOD construction, consistent with the claim.
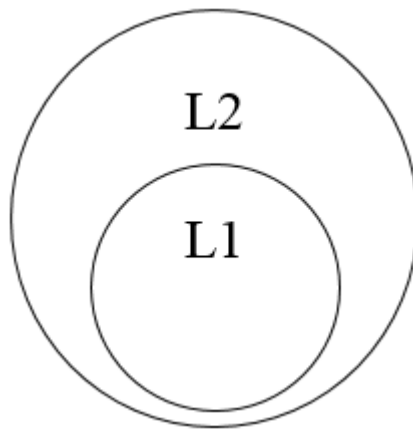
Figure 2. Superset L2 - subset L1

The second situation arises when the L2 argument structure forms are wider than their counterparts in the L1, as showed in Figure 2. This leads to two possibilities being put forward by White (1991). One is that the slight similarity between L1 and L2 will possibly cause L2 learners to speculate that their L1 and L2 are, to a great extent, identical. Therefore, learners will fail to notice the use of L2 forms given that they do not occur in L1 (Adjémian 1983).

The evidence that supports this possibility can be clearly seen in Montrul (2001) who investigated how Spanish learners of English attain the transitivity alternation, including manner of motion verbs, for instance 'march' and 'run'. When there is a PP, English allows a transitivity alternation, as exemplified in (87b). Spanish, on the other hand, does not permit a transitivity alternation as can be observed in (88b):

(87)   a. The soldiers marched.
       b. The captain marched the soldiers to the tents.

(88)   a. Los soldados   marcharon
          the soldiers   marched
          'The soldiers marched.'
       b. * El capitánmarchó   a los soldados   hasta el   campamento
          the captain marched   the soldiers   to   the tent
          'The captain marched the soldiers to the tents.'   Montrul (2001:174)

Hence, the participants' L1 allows a narrower range of argument structures than their L2. She found that Spanish learners did not accept structures that are not allowed in their L1. What is interesting is that nearly 95% of Spanish learners majoring in intermediate English proficiency level did not accept English PP with transitivity alternation as in (88b). She attributed the unacceptability of the English PP with transitivity alternation to its markedness. Montrul (2001: 190) assumed that:

'In short, there is a lot of variability for the control group and for the learners with the acceptance of these verbs in the lexical causative construction. The status of the transitivity alternation with motion verbs is not as uniform as with change-of-state verbs and perhaps attests to the different lexico-semantic representation of these verbs.'

In a similar vein, Sorace (1993) explored the way that unaccusative reflexives are learnt by French learners of Italian. The main purpose of this study was to explore the acquisition of the structure 'raising V + unaccusative V', and specifically focused on optional auxiliary change, as illustrated in (89):

(89)　Mario　　　　è/ha dovuto　　　　　andare a casa
　　　Mario　　　　is/had to　　　　　　go home
　　　'Mario had to go home.'　　　　　　　　　　　　Sorace (1993:26)

As is apparent from the above example, in Italian, it is grammatical with raising verbs such as *dovere* 'must', when preceding unaccusative verbs such as *andare* 'go', in the present perfect tense, the auxiliary is optional, providing a choice between *essere* 'be' and *avere* 'have'. However, French does not possess such a change in the present perfect. Raising verbs in French consistently use *avoir* 'have'. As a result, Italian allows many auxiliaries, whereas French allows only a handful. The majority of French learners of Italian acknowledged the *avere* version of constructions as in (89) example, but not the *essere* version. This led Sorace (1993:43) to claim that:

'The availability of positive evidence of a property *P* in the L2 input may not be a sufficient condition for acquisition to take place, [and that] the propensity of certain learners to notice, or fail to notice, the occurrence of a given property *P* in the L2 input appears to be related to the status of the learner's native language with respect to that property.'

The second possibility is that L2 learners may be able to realise the occurrence of certain L2 constructions that do not exist in their L1 and hence can acquire the L2 grammar owing to the positive evidence presented to them. This point of view was supported by several researchers such as Mazurkewich (1984) who looked at how the English dative alternation is acquired by native speakers of French. Unlike French, English allows a wider range of dative verbs, as exemplified in (85a) and (85b). French learners of English have been highlighted to significantly accept constructions that are not allowed in French as in (85b). Moreover, they proficiently used the English dative alternation.

Additional studies support this view, such as research conducted by Inagaki (2001, 2002). This researcher investigated how Japanese (L1) learners of English (L2) acquire manner of motion verbs with PPs to convey a goal. The researcher concentrated on which kinds of motion verbs can accept PPs conveying goal or goal PPs within English and Japanese (also studied by: Ikegami 1981; Talmy 1985; Yoneyama 1986; Tsujimura 1994). It is noted that English permits not only manner of motion verbs such as 'swim' and 'jog' but also directed motion verbs such as 'enter' and 'go' to occur with goal PPs, as shown in (90):

(90)   a. Lynn walked to school.
        b. Lynn ran into the house.
        c. Lynn went to school (by) walking.
        d. Lynn went/came into the house (by) running.

Manner appears both as a finite manner of motion verb, as illustrated in both (90a) and (90b), and as a subordinate verb as (90c) and (90d) show. Contrary to this, manner of motion verbs with goal PPs such as these are in (91a) and (91b) are not permitted in Japanese; however, directed motion verbs are permitted to be used with goal PPs, as shown in examples (91c) and (91d). Manner, in Japanese, is expressed as the '*te*-form' or a gerund (Jorden 1987), wherein the verb is fixed with a verbal suffix-*te* as can be observed in (91c) and (91d):

(91) a. *John-wa   gakkoo-ni   aruita

      John-Top   school-at   walked

      John walked to school.'

   b. *John-wa   ie-no   naka-ni   hasitta

      John-Top   house-Gen   inside-at   ran

      'John ran into the house.'

   c. John-wa   arui-te   gakkoo-ni   itta

      John-Top   walk-Ger   school-at   went

      'John went to school walking.'

   d. John-wa   hasit-te   ie-no   naka-ni   itta/haitta

      John-Top   run-Ger   house-Gen   inside-at   went/entered

      'John went into/entered the house running.'   (Inagaki 2002: 6).

English can therefore be said to have a broader variety of manner of motion verbs that are allowed to occur with goal PPs than Japanese has. This study revealed that groups of advanced (Inagaki 2001) and intermediate (Inagaki 2002) Japanese learners of English both used constructions such as those in (90a) and (90b).

Having revealed the conflicting outcome in the second case of White's suggestion (the superset of L2), incompatible opinions should be modified. It appears that whether L2 learners have the ability to use positive evidence relies on the sufficiency of the evidence. In others words, in order to expand the L2 argument structure, positive evidence has to be both available and sufficient to avoid any influence that the L1 may have, given the apparent links and similarities that exist between the two languages (Inagaki 2002).

Some have criticised the studies that support the first of White's possibilities. One major source of criticism comes from Montrul (2001), who examined transitive constructions such as manner of motion with the PPs which are not normally used in the English. She implied via her research

that exposure to these forms was too limited for the learners to recognise. It is often presumed that English has many manner of motion verbs with goal PPs, as shown in (90) (as proposed by Inagaki's study), while transitivity alternation which uses manner of motion verbs with PPs, as shown in (87) (as proposed by Montrul's study) is rare, an idea that is proposed by Levin (1993: 31, 105). Levin (1993) compiled a list of 124 manner of motion verbs that occur with goal PPs; yet a list of manner of motion verbs that permit the transitivity alternation only totaled 12 items (Inagaki 2002).

Furthermore, it is difficult to clarify the findings of Sorace's (1993) study, as there is a lack of available data from Italian concerning the number of instances that verbs *essere* and *avere* are used in context. Nonetheless, Sorace (personal communication to Inagaki in October 2000) suggested the verb *essere* is being used with decreasing frequency in favour of the verb *avere*, especially in dialects originating form and being used in northern Italy. Sorace concluded that French speakers could have been influenced by L2 Italian-speaking French individuals, who also are significantly more likely to use the verb *avere* in their sentences (Inagaki 2002).

A further approach concerning the acquisition of argument structure is the FT/FA approach which was formulated by Schwartz & Sprouse (1994, 1996) on which the next subsection will concentrate.

3.3.2.2 The Full Transfer and Full Access approach

The FT/FA approach, which was formulated by Schwartz & Sprouse (1994, 1996), states that the initial stage of the acquisition of L2 is the final stage of the L1 grammar and L2 learners will transfer the L1 representations to the L2 grammar (FT). This means that the initial stage of L2 is divergent from the initial stage of L1. Late, L2 learners will have to restructure their interlanguage and resort to principles and operation constrained by UG once the input cannot be analysed by the L1 grammar (FA). In certain circumstances, the restructuring possibly will

occur rapidly while in other circumstances much more time may possibly be required. The course that L2 development takes is partly determined by the initial state, input, UG and learnability considerations.

Regarding to the FT/FA approach, the initial stage of L1 and L2 acquisition are completely different, and the ultimate attainment of L1 and L2 acquisition are likely to differ; however, there is no attendant conclusion that the cognitive processes underlying L1 and L2 acquisition are divergent. Schwartz & Sprouse (1994, 1996) maintain that the processes underlying development in L2 acquisition are precisely those mechanisms that constrain L1 acquisition. They argued that the final state of L2 acquisition (which is when L2 learners fossilise at different stages of development) is variant from the final state of L1 acquisition due to the constraints on the processes such as UG and learnability principles are constant, whereas the initial states are distinct.

This hypothesis was supported by a number of studies. One example was a case study carried out by Schwartz & Sprouse (1994) to report the acquisition of German by a Turkish speaker (Cevdet) who was learning German in naturalistic setting passes through discrete stage of development in his acquisition of the basics of word order and nominative case assignment. Their primary interest was in the position of the verb, since this is divergent in the two languages. Cevdet at earlier stages resorted to the L1 Turkish grammar: namely, nominative case assignment by Spec-Head agreement and scrambling while in late stages he resorted to UG operations to generate the input. At the late stage, Cevdet's grammar is different from German which was predicted by the subject to fossilisation. They concluded that the L1 influence is absolute.

Moreover, Schwartz (1996) reviewed findings of previous experimental studies on the acquisition of verb placement in German to reveal that L2 learners with different L1 backgrounds show a variety of stages of development. An example can be seen in Turkish and Korean learners of German whose L1 is verb final (XV), initially go through a stage in which

the position of the verb is also final. On the other hand, Arabic and Romance learners of German, whose L1 is VX, they will initially assume that German is also VX and later reset the parameter to the German word order.

Moreover, Whong-Barr & Schwartz (2002) compared the acquisition of the English DOD construction by L1 English, L1 Japanese and L1 Korean children to examine whether L2 children overgeneralise the DOD construction as L1 children and to explore whether L2 children transfer structures of their L1 grammar. Based on the FT/FA approach, they argued that L2 learners with different L1s, their L2 initial states will be different and therefore predicts that their L2 developmental paths will also necessarily differ. They found that the non-native children showed overacceptance in the judgements of the ungrammaticality of the DOD structure with *to*-dative verbs as native children. They showed asymmetric judgements of the ungrammaticality of the DOD structure with *for*-dative verbs. Japanese children overaccepted this structure whereas Koreans correctly rejected it. However, they accepted the grammatical DOD structure with all dative verbs. The results support the L1 transfer in the children acquisition of L2 and support the overgeneralisation by L2 children as L1 children.

The FT/FA approach ought to account for certain issues like similarities of stages and development among L2 learners with a variety of L1 backgrounds as well as identical mistakes between L1 and L2 acquisition. It may not be difficult to interpret the similarity of the initial stages of L2 learners of divergent L1 backgrounds. Montrul (1997) investigated the acquisition of clitic-doubling with dative clitics in Spanish by intermediate French and English-speaking learners. French has dative case and dative clitics but does not allow clitic-doubling. English does not have dative case and clitics. At early stage none of these groups accepted c1itic-doubling very often. The percentage was almost identical for both groups. The interpretation was different although the responses were the same. Their identical responses were interpreted by the assignment of different analyses based on their L1.

Moreover, it will not be difficult to interpret the transfer in the late stage of development. An instance of the late transfer are studies conducted by White (1991, 1992) to investigate the acquisition of the verb movement parameter by intermediate French learners of English. In French, the verb undergoes movement to Agr overtly. However, in English it does not undergo such the movement parametric divergence has an influence on the position of adverbs in these two languages (English allows SAVO but French does not; French allows SVAO but English does not). It was revealed that French learners of English accept the incorrect SVAO, suggesting that they were still influenced by their LI. This finding provides evidence of the suggestion by Schwartz & Sprouse (1994) that the initial state of L2 learners is their L1.

Further hypothesis will be discussed in the following section is the FRH which is formulated by Lardiere (2008, 2009, 2013).

3.3.2.3 Feature Reassembly Hypothesis

The FRH is proposed by Lardiere (2008, 2009, 2013) which argues that successful L2 acquisition proceeds by means of reassembling sets of lexical features which are drawn from the L1 lexicon into feature bundles appropriate to the L2. The feature reassembly process follows 'initial mapping' as argued by Gil & Marsden (2013:118):

> 'L2 acquisition proceeds by means of the learner perceiving correspondences between lexical items in the L2 input and items in their own L1. This results in the L2 form being mapped to the L1 feature set for the item that is perceived to be equivalent. Once this initial mapping is established 'feature reassembly' can occur, if required: features can be added or deleted from the L1-based feature set, as motivated by evidence in the input.'

The FRH follows the FT/FA approach by assuming that adult L2 learners bring the formal features, which are assembled into the L1 lexical items to the task of L2 acquisition. It could be said that the FRH is a modulation of the FT/FA approach as it insists that the successful acquisition of L2 relies on the reassembling the sets of feature bundles of L1 lexical items into feature bundles appropriate to the L2, in circumstances where divergences occur.

The learning task for L2 learners is twofold, namely, mapping features and feature reassembly. Firstly, L2 learners have to map a lexical item to its closet equivalent in L2, then, they reassemble the features that do not correspond within both L1 and L2. During the first stage which is the mapping of the sets of lexical items in L1 to those of L2, Lardiere (2009:191) predicted that:

'It seems plausible to assume (and the feature re-assembly approach indeed rests on the assumption) that learners will look for morpholexical correspondences in the L2 to those in their L1, presumably on the basis of semantic meaning or grammatical function (the phonetic matrices will obviously differ).'

Consequently, the FRH assumes that L1 transfer is the initial attempt to directly map between L1 and L2 lexical items. However, in the case of failure of mapping, L2 learners need to refine the combined features which were transferred from their L1 and reassemble features that attribute to different feature bundles in L1 and L2.

At the second stage which is feature reassembly, L2 learners may need either to learn new features, or abandon features allowed in their L1, but not in their L2. As a consequence, interlanguage development might be conceptualised by the FRH as a process of assembling L1 features into L2 features.

Since the FRH was proposed, several empirical studies were carried out to investigate the value of this hypothesis in SLA. One example is Choi & Lardiere (2006) who investigated how English learners of Korean interpret *wh*-expressions in their L2. The problem is in L1 (English), both the *wh*-operator and the [Q] feature appear into one lexical item (e.g. 'what' or 'who'). However, in the L2 (Korean) *wh*-elements are variables that have not only *wh*-question readings but also can have a non-interrogative indefinite interpretation 'something' or 'somebody'. According to Choi & Lardiere (2006), the [Q] feature is interpreted by a particle in Korean. Therefore, if a [Q] particle (*-ci*) is utilised, the *wh*-element is realised within a question. If a declarative particle (*-ta*) is presented, the *wh*-element should be realised as an indefinite interpretation. The subjects were English intermediate learners of Korean. The participants interpreted Korean *wh*-elements only with a question, indicating that they mapped their L1 feature to the closest equivalent L2 feature, without any realisation of the value of the particle in the *wh*-expression interpretation.

Another recent study which applied its findings to the FRH was carried out by Gil and Marsden (2013). They investigated the acquisition of polarity items 'any' and existential quantifiers, in English, Mandarin, Japanese, and Korean by reviewing a number of prior L2 studies. The task is that native speakers of English/Japanese have to realise the possibility of the interpretation of interrogative and existential in L2 Mandarin and Korean. Nevertheless, in the case of the acquisition of Mandarin by Japanese, interrogative and existential patterns are morphologically related: *dare* 'who' and *dareka* 'anyone/someone'. Consequently, Gil and Marsden anticipated that English learners of Mandarin will face more difficulties than Japanese learners of Mandarin, in English, there is no morphological connection between interrogatives and existentials. Based on their analysis, they (2013: 141) concluded that:

> 'The predictions about mapping-the first step of the Feature Reassembly process
> - were largely confirmed. We predicted that mapping of L2 English *any* to the
> features sets of existentials in L1 Korean or Chinese would be relatively
> straightforward.'

Mapping existential Chinese and Korean features into English was easier than the other way around. Beginner English and Japanese learners of Chinese and Korean only mapped L2 *wh-*expressions to interrogatives, as in their L1s, and did not show insight of interpreting L2 *wh-*expressions as existential, a possibility available in the L2s. However, they did not find the expected facilitative effect for Japanese learners of Chinese. Gil and Marsden (2013) interpreted their findings as evidence of the primacy of meaning and syntactic function as components to define initial mapping options to the exclusion of superficial formal convergences.

Hwang & Lardiere (2013) explored the acquisition of the Korean plural marker *-tul* by English native speakers. They (2013: 67) determine that:

> 'The precise (phonological, morphosyntactic, semantic, pragmatic, and/or discourse) conditions under which a particular feature is expressed is a critical part of the feature assembly problem, and the complexity of those conditions, or the degree to which they differ from those of the L1, will contribute to the difficulty of the L2 learning task.'

Hwang & Lardiere (2013) predicted that the complexity and variance of these conditions from L1 and L2 results in late acquisition of the property. They also argued that the features the most deeply embedded within a hierarchy will be acquired last. They applied such predictions to their study and stated that although English and Korean have morphological markers that convey the idea of plurality, the suffix Korean *–tul* is utilised with nouns (intrinsic plural marker) and with other parts of speech (extrinsic plural marker) such as adverbs and locative phrases where it usually gets a distributive interpretation (=*every*).

Hwang and Lardiere (2013) applied some features to determine the distribution of the intrinsic marker: specificity, the quantificational feature (i.e. the presence of a quantifier), the type of quantifier (non-numerical e.g. *many* vs. numerical e.g. *three*), and the [Human] feature. This

implies that Korean morphological realisation of plurality is much more restricted than that is in English. Moreover, these features seem to be hierarchically constructed, where the specific type of classifier can only be relevant if a quantifier is utilised and the [Human] specification can be only relevant for numerical quantifiers: quantifier yes/no > type of quantifier > [Human]. Finally, Hwang and Lardiere predicted that the acquisition of the intrinsic marker is prior to the acquisition of the extrinsic marker. In their words, they (2013: 80) predicted that:

'Our participants apparently recognized the intrinsic plural as having essentially the same grammatical function as plural-marking in English, albeit with more complex featural co-occurrence restrictions. These restrictions were eventually added as required by the most advanced proficiency group. Acquiring the extrinsic plural, on the other hand, requires extending the use of the 'plural' morpheme in Korean to categories such as adverbs and postpositional phrases that could never be pluralized in the L1 and associating it with a grammatical function that is situated on a completely different morpholexical item (or set of items) in the L1. The features themselves are present in both languages; however, their grammaticalized distribution on lexical items in each language is strikingly different.'

77 English learners at four Korean proficiency levels participated as an experimental group and 31 native speakers of Korean acted as controls. These participants completed five tasks designed: an elicitation task (for intrinsic *-tul*), an acceptability judgment task (for intrinsic *-tul*), a preference task (for extrinsic *-tul*), a truth value judgment task (for both intrinsic and extrinsic *-tul*), and a multiple-choice translation task (for both intrinsic and extrinsic *-tul*) to probe for knowledge of particular features and restrictions associated with so-called intrinsic and extrinsic plural-marking in Korean.

Based on their findings, Hwang and Lardiere (2013) suggested that knowledge of both types of plural developed with increasing proficiency. Nonetheless, the features related to the intrinsic plural were more easily acquired than the extrinsic plural, which requires recruiting the features

of a completely distinct morpho-lexical item from their L1. Moreover, they found some developmental evidence for a feature hierarchy in quantified Korean noun phrases, in which the most deeply-embedded featural co-occurrence restriction on intrinsic plural-marking was the last acquired.

3.4 Certain previous studies of the acquisition of argument structure

The dative alternation received considerable attention from L1 and L2 acquisition researchers during the 1980s, especially from the perspective of generative grammar. These studies focused primarily on investigating the following two questions by means of grammaticality judgments and sentence completion tasks: First, how well do learners acquire hard constraints on the possibility of alternation, such as the fixed prepositional realisation of most verbs of Latin origin such as 'donate'; second, what is the order in which learners acquire the possible realisations for verbs that do alternate. Major results (e.g. Mazurkewich 1985; Mazurkewich & White 1984) were that verb-specific constraints are acquirable as hard constraints for L1 learners with rare errors, but are only learned as softer constraints or sometimes not learned at all for L2 learners. With regard to acquisition order, the PD structure tends to be acquired earlier and is easier for L2 learners.

3.4.1 The acquisition of the dative alternation by L1 learners

One of the most significant discussions in the acquisition of English as L1 is the acquisition of the dative alternation. A remarkable amount of studies have been carried out in this field and indicated that children native speakers of English acquired the PD construction earlier than the DOD construction (Carrow 1968; Fischer 1971; Stayton 1974; Bloom et al. 1975; Mazurkewich & White 1984). Some studies, nevertheless, indicated that children can produce the two constructions at the same time in their early utterances (Pinker 1984, 1989; Gropen et al. 1989),

and some studies argued that English children used the DOD construction with certain verbs such as 'give', 'tell' and 'show' earlier than the PD construction (Brown 1973; Potts 1979).

A considerable amount of studies have investigated the acquisition of the English dative alternation adapting four approaches: the transformation rule analysis, the lexical redundancy rule analysis, the lexical listing rule analysis and the reduced form tendency analysis. The Transformation rule analysis as formulated by Fillmore (1965), Jackendoff & Culicover (1971) and Emonds (1972) states that the two constructions are identical to some extent and the DOD construction is derived from the PD construction by the rule of dative movement. This rule moves the indirect object (the Goal argument) to the position immediately following the verb and deletes the preposition.

Assuming this approach to the acquisition of the English dative alternation as L1, Fischer (1971) investigated how native speakers of English acquire the dative alternation by using imitation, comprehension and choice tasks. The result of her study revealed that the PD construction is preferable especially when the direct object is inanimate and the indirect object animate. Moreover, the dative alternation is mastered when the child reaches age five.

It was also reported that the *for*-dative construction was more difficult to acquire than the *to*-dative construction. This was supported by the evidence that several children who participated in this study could not accurately produce a sentence such as *the daddy is buying the mommy a car* even though they could understand such a sentence.

This approach again was adopted by Hoffmann (1980) who argued that a number of verbs cannot only appear in the PD structure but also in the DOD structure as well. However, he added that some verbs, for example, 'award', 'assign' and 'teach', can appear with other structures which distinguish them from other alternating verbs. As Hoffmann (1980: 130) observed:

'Notice, though, that *teach* has other properties that distinguish it from the productive class of double-object verbs. For example, *teach* may appear with only an indirect object NP.'

An instance of this can be observed through the comparison between teach and 'give'. First, 'teach' can occur with only the indirect object but 'give' cannot as (92) show:

(92)   a. Paul taught Martha.
      b. *Paul gave Martha.

As the previous example shows 'give' is required to appear with both the direct and indirect objects. However, it is grammatical for 'teach' to occur with only the indirect object.
A further observation to show that some alternating verbs can appear in other structure more than the rest of them. The complement 'how to' can follow the indirect object with 'teach' but cannot do so with 'give', as illustrated in the following example:

(93)   a. Paul taught Martha how to swim.
      b. *Paul gave Martha how to have a pen.

Example (93a) is well-formed since the indirect object of 'teach' can be followed by the complement 'how to'. Nonetheless, example (93b) is ungrammatical since the complement 'how to' cannot follow the indirect object with 'give.' According to the difference between 'teach' and other alternating verbs, he (1980: 130) disputed that:

'Given these facts, it appears as though the double-object construction with teach is different from that found with verbs of the GIVE class. The contextual possibility of a double object must simply be listed as part of the lexical entry of *teach*.'

According to him in terms of the acquisition of the DOD structure based on the transformation solution is that the child has to realise the appearance of a verb in the PD structure and the phrasal verb expression such as *John gave the money away to the poor* to predict the occurrence of the DOD structure rather than receiving evidence of the appearance of the DOD structure with a verb as the transformation rules are general. Hoffmann (1980: 135) mentioned:

'In terms of language acquisition, the transformational solution proposed here is surely preferable to lexical accounts such as that suggested by Baker (1979). Instead of having to receive independent evidence of a double-object context for a particular verb, the child must only notice that it occurs in the structure [V' [V NP PRT] DATIVE]. Given this and a set of general rules, the appearance of the double-object is fully predictable.'

He (1980) also believed that L1 learners do not overgeneralise the DOD structure to non-alternating verbs as he mentioned that:

'The child must only notice that a verb appears with both a particle and a dative in order to correctly predict the appearance of a double object 'the DOD structure'. No false predictions will be made about dative verbs which do not appear in this context. The fact that children do not seem to overgeneralize dative double-objects to verbs of the DONATE-class is thus accounted for; the grammar proposed here will not generate double-objects for these verbs, and so none is expected.' (1988; 117)

Hoffmann (1980) assumed that children do not overgeneralise the use of the DOD construction with certain verbs such as 'report'. Conversely, certain studies indicated that children overgeneralise the verb 'report' in the DOD construction. Hammouda (1988), for instance, found that children use verbs such as 'report' in the DOD construction. Furthermore, Gropen et al (1989) noticed that Adam did overgeneralise the DOD construction when he was four years

old. However, it might be criticised that the acquisition of the dative alternation cannot be interpreted by the particle trigger analysis which Hoffmann (1980) suggested.

A serious weakness with the transformation rule analysis, however, is that it fails to fully interpret the dative movement rule which states that the DOD construction is derived from the PD construction. One criticism on the transformation rule analysis was explored by Allerton (1978) who found that certain English DOD constructions do not have corresponding PD constructions, as exemplified in (94):

(94)   a. Kim envied his brother his success.
        b. *Kim envied his success for his brother.

Another weakness with the transformation rule analysis is outlined by Oehrle (1976) who investigated the acquisition of the English dative alternation as L1. Based on the phrase structure rules, Oehrle argued that examples as *John gave the book to Mary* and *John gave Mary the book* are base-generated and the relationship between these constructions cannot be accounted by the transformation rule analysis, instead, it is characterised by the lexical redundancy rule which reduces the independent information content of the lexicon.
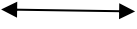
Mazurkewich & White (1984) claimed that the relation between the PD and the DOD constructions is governed by means of a lexical redundancy rule. They claimed that the adult grammar consists of a lexical redundancy rule for the dative alternation, restricted by morphological and semantic constraints. The native verb 'give', for instance, can occur in the DOD construction but the Latinate verb 'donate' cannot. Moreover, verbs must satisfy the condition that the indirect object is the prospective possessor or the beneficiary of the direct object to alternate as in *John gave Peter the book*, but they are not allowed to alternate, if they do not fulfil the condition as in *Could you watch me the television program?*

Table 3. Lexical redundancy rule in adult grammar		
+ V_i (+ native) + —— NP$_1$ [{to/for} NP$_2$]	←——→	+ V_i (+ native) + —— NP$_2$ NP$_1$ NP$_2$ possessor of NP$_1$ and goal or beneficiary

Mazurkewich & White (1984) stated that both the PD and the DOD constructions can be interrelated via a lexical redundancy rule, as shown in Table 3 which is cited from Mazurkewich & White (1984:274). However, children are assumed to use the rule creatively. They firstly assume that both structures associate with each other via this lexical rule; however, they are not aware of the semantic and morphological constraints. Children will be aware of these constraints later on the basis of positive evidence. For the acquisition of the semantic constraint, it has been argued that once the child realises that the indirect object (the Goal) should be the possessor of the direct object (the Theme), the children will combine this factor to their lexical redundancy rule. Consequently, the child will not use the DOD construction with verbs such as 'brush', 'wash' and 'open' owing to the indirect object cannot be the possessor of the direct object (the Theme). Furthermore, they argued that the DOD construction involving verbs that denote prior or inalienable possessor and cannot involve transfer to the Goal, as exemplified in (95), may function as the triggering element. They stated that since the DOD construction does not involve physical transfer, the possessor restriction is drawn to the child's attention as an essential element for a verb to allow the DOD construction. This may guide the child to acquire the possessor constraint.

(95)   The noise gave Mary a headache.   Mazurkewich & White (1984: 276)

Table 4. Lexical redundancy rule in children grammar		
$+ V_i$ (+ native) $+$ —— NP_1 [{to/for} NP_2]	⟷	$+ V_i$ $+$ —— $NP_2 NP_1$ NP_2 possessor of NP_1 and goal or beneficiary

Regarding the acquisition of the morphological constraint, the experimenters disputed that children will not be able to categorise dative verbs morphologically in the early acquisition procedure which may be before going to school as a consequence of late acquisition of Latinate verbs in the acquisition of lexical items which may occur in the late childhood. This means that by the time of the acquisition of the morphological constraint children have already established the semantic constraint. However, with regard to the late acquisition of Latinate verbs, the experimenters argued that only older children are expected to extend the DOD construction to Latinate verbs such as 'donate' due to the fact that the Goal argument can be the possessor of the Theme argument, as their grammar shows in Table 4 which is cited from Mazurkewich & White (1984:276). At this stage of the acquisition procedure, positive evidence will draw the children's attention to the fact that the DOD structure is not allowed with Latinate verbs.

Mazurkewich & White (1984) examined whether overgeneralisations of the English dative alternation occur among children. Moreover, they investigated children's acquisition of the semantics prospective possessor restriction and the morphological Latinate restriction on the DOD construction.

The data were collected by means of a grammaticality judgment task which was conducted on three groups of children at a variety of ages: 9-years old, 12-years old and 15-years old. The verbs used in this study were classified into two classes. The first class included alternating verbs such as *Peter threw a football to Philip/Peter threw Philip a football* (goal DOD) *Diana baked a cake for Nicole/Diana baked Nicole a cake* (ben DOD). The second class was composed of non-alternating verbs and this class was further subdivided into two groups. The first group

contained non-alternating verbs that lack the prospective possessor constraint such as *Larry drove the car for Robin/*Larry drove Robin the car* (ben DOD)[3] and the second group involved non-alternating verbs that lack the morphological constraint such as *David suggested the trip to Ruth/ *David suggested Ruth the trip* (goal DOD) *Anne created a costume for Sarah/ *Anne created Sarah a costume* (ben DOD). The questionnaire is further summarised in Table 5.

Table 5. Shows a summary of the material of Mazurkewich & White's study			
Alternating verbs	Goal	Peter threw a football to Philip Peter threw Philip a football	
	Benefactive	Diana baked a cake for Nicole Diana baked Nicole a cake	
Non-alternating verbs	Semantic constraint	Goal	————————
		Benefactive	Larry drove the car for Robin *Larry drove Robin the car
	Morphological constraint	Goal	David suggested the trip to Ruth *David suggested Ruth the trip
		Benefactive	Anne created a costume for Sarah *Anne created Sarah a costume

What was found is that all children did judge the ungrammatical DOD constructions as well-formed sentences of English. Moreover, as expected, children overaccepted the DOD construction with Latinate verbs. What is interesting in the data was that children who were 12 years and 15 years overaccepted Latinate ben DOD construction more than Latinate goal DOD construction (61.1% vs. 33.3% for the 12-year-olds and 27.8% vs. 11.1% for the 15-year-olds). The results of this study are summarised in Table 6, which is adopted from the appendix 2 of the acquisition of the dative alternation: unlearning overgeneralisations.

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[3]They did not test the goal argument in a DOD that violates the semantic constraint.

sentence type	9-year-old		12-year-old		15-year-old	
	gram	ungram	gram	ungram	gram	ungram
Peter threw a football to Philip.	96.7	3.3	100	0.0	100	0.0
Peter threw Philip a football.	100	0.0	90.0	10.0	100	0.0
Diana baked a cake for Nicole.	100	0.0	96.7	3.3	100	00
Diana baked Nicole a cake.	96.7	3.3	93.3	6.7	86.7	13.3
Larry drove the car for Robin.	82.0	18.0	——	——	——	——
*Larry drove Robin the car.	18.0	82.0	——	——	——	——
David suggested the trip to Ruth.	73.3	26.7	100	0.0	100	0.0
*David suggested Ruth the trip.	46.7	53.3	33.3	66.7	11.1	88.9
Anne created a costume for Sarah.	——	——	100	0.0	100	0.0
*Anne created Sarah a costume.	——	——	61.1	38.9	27.8	72.2

Table 6. Shows the distribution in percentages of responses according to sentence type

—— = sentence type is not tested; gram = grammatical; ungram = ungrammatical.

The acquisition of the prospective possessor restriction and the Latinate restriction can be observed in the youngest group since this group was the only group tested both on the DOD constructions that violate the semantic constraint such as *Larry drove Robin the car* and the DOD constructions that violate the morphological constraint such as *David suggested Ruth the trip*. The comparison between illicit Latinate goal DOD construction and illicit native ben DOD construction showed that the children overgeneralised the illicit Latinate goal DOD construction more than the illicit native ben DOD construction (46.7% vs. 18%). Such a result led the experimenters to argue that the acquisition of the semantic constraint is earlier than the acquisition of the morphological constraint.

The key problem with their argument was pointed out by Hammouda (1988) who observed that children should have evidence that non-possession cases are not allowed to occur in the DOD construction in order to know the relevance of possession. Likewise, in the case of the

morphological constraint, they ought to discover that Latinate verbs, which they have never been exposed to, are not allowed to occur in the DOD construction.

For this reason, Baker (1979) drew our attention to an important 'learnability paradox' which is known as 'the projection problem' for language acquisition. This theory states that learners ought to acquire grammars that create infinitely more sentences than they have been exposed to. If they overgeneralise, they will face difficulty to restructure without negative evidence. In order to solve this 'learnability paradox', Baker (1979) proposed the lexical listing approach which states that children acquire the dative alternation verb-by-verb based on positive evidence from the input. With regard to this approach, children will subcategorise 'give' as in either the PD or the DOD constructions on the basis of positive evidence. Whereas 'donate' will be in the PD but not by the DOD construction since they have never been exposed to such a construction.

This approach was built on two main assumptions. The first assumption is that early acquirers do not receive enough negative evidence to correct their utterances. By way of illustration, Brown & Hanlon (1970) showed that early acquirers are hardly ever corrected when it comes to morphological and syntactical errors. Moreover, McNeill (1970) argued although early acquirers' utterances are sometimes modified and corrected, they will not recognise the modifications and corrections. Gordon (1990) also argued that children will not rely on negative evidence; thus, such evidence cannot explain the language acquisition processes. The second assumption is that children do not overgeneralise the grammatical rules from one category to another. Baker (1979) built this assumption on evidence that children do not overgeneralise the use of Give class verbs to Donate class verbs with the DOD construction. However, a number of studies argued that Baker's proposal is too conservative. Mazurkewich (1981), for instance, found that children old enough to understand and use the class of Latinate verbs overgeneralised the dative alternation. Another piece of evidence came from Hammouda (1988) who found that American children overgeneralised Latinate verbs such as 'report' to the DOD construction even though such construction is not allowed in the adult language.

Hammouda (1988) adopted Baker's proposal with certain modifications as an effort to solve this matter. She called her approach Reduced Form Tendency (RFT). This approach can be defined as a performance strategy in which learners are guided by a general tendency to reduce a structure from its corresponding expanded construction. Learners prefer to express themselves by the sentence in (96a), instead of the sentence in (96b):

(96) a. I think my neighbour moved in his house in the middle of last month.
       b. I think that my neighbour moved in his house in the middle of last month.

Preference of example (96a) to example (96b) due to the fact that example (96a) is a reduced structure of example (96b).

The RFT may be utilised in a couple of cases. One is that children are most likely to be led by the RFT to use the DOD structure with non-alternating verbs. Second, adult speakers might utilise the RFT with new verbs such as 'telex' and 'telegraph' which they accept in the DOD structure. Hammouda (1988: 34) summarised the prediction of the RFT by arguing that:

> 'The RFT predicts that children will produce verbs that dativize in adult speech and also verbs that do not, whereas adults use it to decide between two possible alternatives. Furthermore, I claim that adults utilize the RFT in the case of new verbs.'

Hammouda (1988) agreed with Baker (1979) that children know the argument structure of datives, but do not know which verbs are dativisable until they are exposed to them in the input. She also added that the RFT is not adequate to explain overgeneralisation since the RFT should work with the frequency of occurrence of the relevant verbs. It might be assumed that the interaction between the RFT and the frequency may assist the child to neglect the verbs such as 'report' to appear in the DOD construction more than the verb 'transmit' given that 'report' is more frequent than 'transmit' (Francis & Kucera 1982). Hammouda (1988) supported her

argument that overgeneralisations of the dative alternation in children's speech ought to be a result of the RFT/frequency; she investigated how adults and children judge the Give class verbs and the Tell class verbs (in her terminology: Report class) in the DOD construction. A comparison between the adults and children revealed that the most frequent verb of each verb class such as 'give' and 'report' as ranked by Francis and Kucera (1982), was the one judged most accurately by both groups. This finding seems to be consistent with the frequency hypothesis which predicts similar judgments for verbs with high frequency.

One of the attempts to solve Baker's learnability paradox was the criterion governed productivity hypothesis which is offered by Pinker (1984, 1989). This proposal agrees with Mazurkewich & White (1984) on the importance of morpho-phonological and semantic constraints. He, however, added that such constraints are not sufficient conditions at early stages. He also claimed that children begin acquiring the dative alternation conservatively and based on positive evidence.

> 'Children first use both of the argument structures involved in an alternation usually with a relatively small set of verbs and with the assumption that the rule formation process is triggered by the presence in the lexicon of several verbs with pairs of argument structures, learned conservatively.' (1989: 283)

Children become productive when they begin recognising the morpho-phonological and semantic constraints. In the meantime, they will use productively what is called narrow conflation class verbs such as 'give', 'show', 'sell' and 'hand'. These verbs have an obvious meaning of changing possession. On the other hand, they will be conservative with what is called broad conflation class verbs such as 'throw', 'bake' and 'carry' owing to the fact that the meaning of changing possession and causation is not obvious at least to the children. It may be said that children productively apply semantic rules when exposed to new verbs of the narrow conflation class. However, they become conservative when exposed to new verbs of the broad conflation class since some of these verbs violate the general rules. Pinker stated that children

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still overgeneralise the rules given the lack of negative evidence. Before reaching adult language, children will probably rely on the semantic structure hypothesis testing and search for the properties which distinguish the dativisable from undativisable verbs. According to Pinker, children concentrate upon the semantic factor which is the meaning of the verb rather than upon the morpho-phonological constraint.

Despite the fact that Pinker (1989) agreed with Mazurkewich & White (1984) on the significance of the morpho-phonological and semantic constraints on the dative alternation, he adopted their data as evidence against their argument of the earlier acquisition of the PD structure. He argued that the PD construction was not preferred to the DOD construction in the spontaneous speech of young children when common verbs such as 'give' and 'show' were used, specifically when used with pronominal arguments. Pinker (1989) supported this argument by citing further evidence from Bowerman (1989) who reported on three children's speech, Adam, Eve & Sarah. These children were observed by Brown and his students (1973), and the speech of Mark & Ross who were recorded by their father MacWhinney. Pinker (1989) stated that:

> 'It is occasionally proposed that the double-object form of the dative is the marked form relative to the *to*-or *for*-dative form. Unfortunately the developmental evidence is far from straightforward. Brown (1973) reports that datives of either form are fairly rare in stage 1 speech, but cites several examples of double-object forms used by the children.' (1989: 398)

Gropen et al (1989), nevertheless, argued that the criterion governed productivity hypothesis, claimed by Pinker (1984, 1989), is crucial but not sufficient to interpret the acquisition of the dative alternation. They also claimed that this approach is an epiphenomenon of more general principles rather than a principle itself. Moreover, they suggested an approach which incorporates the criterion governed productivity hypothesis to solve the learnability paradox and answer the question of how English children acquire the dative alternation. They proposed that

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the acquisition of the dative alternation relies on a couple of levels: the BRRs which refer to the opportunity of a verb meaning 'cause to move' to be changed into one meaning 'cause to have'. The second level is the NRRs which classify semantically and morphologically verbs into ten or more subclasses.

Gropen et al (1989) carried out an experimental study to support their argument in which three main issues were investigated. First, they examined Baker's (1979) conservative proposal for acquiring the English dative alternation by native speakers which was described earlier. Baker (1979) argued that due to the fact that a number of dative verbs cannot take the DOD construction, children will acquire the dative alternation on a verb-by-verb basis. Nevertheless, it was stated that if Baker's argument is so, children must not produce the DOD constructions they have never been exposed to in the input, such as with nonce verbs. Second, do the proposed constraints in the alternating verbs psychologically exist in the adult lexicon? Third, they investigated to what extent children can be sensitive to the semantic restrictions governing the DOD construction and operating on two levels: the BRRs and the NRRs. They claimed that the possessor constraint (the BRRs) is a part of UG.

They adopted two sources of data to answer these questions: they conducted an analysis of computer-based transcripts of children's spontaneous speech in naturalistic settings so as to characterise the onset, frequency and character of five children's use of dative constructions. Three of the children were Adam, Sarah & Eve who were observed by Brown & his students (1973). The other two children were Ross & Mark whose speech was recorded by their father MacWhinney (1985). The analysis of this data clearly showed that both the PD and the DOD constructions were plentiful in the children's speech, but neither construction emerged first.

The second source of the data was experimental studies in which they exposed the participants to novel verbs in one dative construction and then tested their willingness to use the verbs in the other construction. They ran three experimental studies: firstly, they investigated the extent to which the semantic constraint (prospective possession) and morpho-phonological constraint

(specifically, monosyllabicity) on the dative structures are psychologically real for the adults. The sample of this study was 64 native speakers of English who were given a questionnaire that composed of eight paragraphs. Each paragraph was followed by a block of 11 sentences to be rated. Two of them were dative structures and the rest were distractor items. The target verbs were four monosyllabic ('norp', 'pell', 'moop' and 'tonk') and polysyllabic ('calimode', 'repetrine', 'orgulate' and 'dorfinize'). The result show that the participants accepted the DOD structure with a sentence which involved a change of possession more than a sentence which did not involve a change of possession. And for one verb which inherently involved a change of possession and which took the preposition 'to', participants accepted the sentence with monosyllabic verbs more than with polysyllabic. Consequently, the semantic and morpho-phonological constraints are psychologically real for the adults.

The second experimental study was carried out to examine Baker's (1979) conservative proposal for learning English dative alternation by the native speakers. To investigate this proposal, 16 native speakers of English (mean age 7.4) were recruited and examined individually in a separate room at their school. The verbs adopted were four nonce verbs ('norp', 'keat', 'orgulate' and 'calimode') which had a meaning of transfer of possession. These verbs were introduced by performing a corresponding action. The experimenters began each session by introducing the novel stem as well as the recipient. To elicit the DOD construction, the experimenter performed the appropriate action while asking about the recipient. They then repeated this kind of action and question with a variety of transferred objects. The informants' task was to describe the action by nonce verbs. To elicit the PD construction, the experimenter performed the appropriate action while asking about the transferred objects. For each verb, there was a comprehension task in which the child was requested to present the PD and the DOD structures. The comprehension task followed the production task for each verb. In all cases animal toys were used in the comprehension task for recipient and transferred object alike, to prevent the child from choosing the animal as the recipient all the time. At the end, children were given the production and comprehension tasks once again, adopting the verb 'give' to control the efficiency of the methods.

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The result of this empirical study revealed that the participants produced the construction that they had been exposed to as a model. Moreover, there was an overgeneralisation of using the DOD construction by these participants. When the nonce verbs were modelled in the PD construction, the DOD construction was generalised 30% of the time. Consequently, the experimenters concluded that the children are not strictly conservative but productive.

The third experiment was carried out to investigate to what extent children are sensitive to the semantic restriction on the DOD construction. Gropen et al (1989) claimed that the possessor constraint is a part of UG. To investigate the knowledge of the possessor restriction, an elicited production task was distributed to a group of 32 English-native speakers. The experiment adopted a variety of types of recipients in the thematic role sense to examine the investigated knowledge. Their assumption was that if children acquire the semantic constraint, they possibly will express the DOD construction when the Goal is the child him/herself or an animate toy more than when the Goal is an inanimate toy. The Themes were a ball, a miniature wheel, a whistle, a crayon, a spoon and a marble. The experimenters used the nonce verbs such as ('norp', 'keat', 'orgulate' and 'calimode') which were presented in a neutral gerund structure.

The results show that the participants used the DOD construction more when the recipients of the Theme were themselves or animate toys by 52% and 38% respectively. Moreover, they used the DOD structure by 32% when the recipients were inanimate toys. This result supports the finding of the first study that the children are not strictly conservative but productive.

The researchers contributed certain points: first, children overgeneralised the use of the DOD construction. They also found both children and adults were sensitive to the morpho-phonological and semantic constraints proposed by Mazurkewich & White (1984), in spite of the fact that children did not apply them as consistently as adults did. Finally, they disagreed that the acceptability of the PD construction is acquired earlier than the DOD construction; neither of the two constructions emerged first in children's spontaneous speech.

The knowledge of the dative alternation in children was investigated by Potts (1979). They found that children preferred the DOD construction with the verb 'give' with an animate indirect object and an inanimate direct object, whereas, they preferred the PD construction with the verb 'show' with an animate indirect object and an inanimate direct object. Mazurkewich (1981) responded to these findings:

> 'The dative verb *give* appears to be the exceptional case. This verb has a high frequency of occurrence in discourse. It may be that a sentence that contains the verb *give* and a double-object construction is regarded as an unanalysed routine by very young children.' (1981: 44)

To sum up, there has been disagreement between researchers as to which structure, the PD or the DOD, is acquired earlier by native speakers of English as L1. Many researchers have argued that the PD construction is acquired earlier than the DOD construction (Carrow 1968; Fischer 1971; Stayton 1974; Bloom et al 1975; Mazurkewich & White 1984). Certain experimental studies, on the other hand, have indicated that children can produce the two constructions; neither construction emerges earlier than the other (Pinker 1984, 1989; Gropen et al, 1989). However, other researchers have illustrated that in some cases, such as with certain pronominal objects, including the verb 'give', 'tell' and 'show', as exemplified in (97), children produce the DOD construction earlier than the PD construction (Brown 1973; Potts 1979).

(97)   a. John gave me the pen.
       b. Martha told him the story.
       c. Paul showed her the picture.

3.4.2 The acquisition of the dative alternation by L2 learners

One of the most significant discussions in L2 acquisition is the acquisition of the dative alternation especially in English. This is due to the complexity of the dative alternation which makes it tricky to be learned. This is evidenced by Gitterman (1982) who found that the dative alternation is one of the hardest constructions to learn in English as an L2, since L2 learners must not only distinguish the alternating verbs from the unalternating verbs but also discriminate between verbs that take a *to*-dative and those which take a *for*-dative.

It might be argued that the process of learning the dative alternation is identical for both L1 and L2 learners. Mazurkewich (1981: 3) claimed that:

> 'In the case of second language learners, it is most likely that the structure is not taught because there has been no discernible rule articulated until recently that would indicate which class of verbs does not undergo the dative alternation. As a result, the structure has been ignored and does not appear in the second language teaching materials.'

Moreover, Mazurkewich (1981) added that both L1 and L2 learners acquire the dative alternation naturally. However, L2 learners may receive negative evidence through responses to their errors. Mazurkewich (1981: 3) stated this situation:

> 'Second language learners, unlike first language learners, are subject to correction by their teacher or peers so that they might obtain negative information in reaction to any overgeneralisation of the dative alternation rule that might be produced.'

A considerable amount of research has been published concerning the acquisition of dative constructions in the field of the acquisition of L2. For instance, Mazurkewich (1981) examined

how French and Inuktitut (Eskimo) speakers acquire the English dative alternation based on a lexical redundancy rule within markedness theory. The subjects of this study were classified into three classes regarding to their English proficiency levels: beginner, intermediate and advanced. A control group was made up of 16 of English-native speakers aged 12-15 years old. Intuitive judgments, auditory recall and written responses were prepared. She adopted 16 dative verbs. These verbs appeared in different structures such as declarative sentences, dative questions in both active and passive forms, and interaction of dative and passive constructions.

The results of this investigation revealed that the participants accepted dative verbs in the PD structure more than the DOD construction. Mazurkewich (1981) concluded that this variance of the grammatical judgments between these two structures reflects the difficulty of acquiring these structures. That is, the structure where the Goal argument is assigned by a preposition can be more easily acquirable than the DOD construction in which the two internal arguments are assigned by the word order.

Mazurkewich (1981, 1984, 1985) argued that this difficulty of order supports the lexical approach in which the acquisition order is determined by a theory of markedness associated with UG which differentiates between 'unmarked' and 'marked' in terms of complexity, nature, frequency and cross linguistic occurrence. The term 'unmarked' has come to be used to refer to the rules of core grammar which are expected to be easier to acquire on the basic of minimal exposure to the L2 grammar given that they are simple, natural, frequent and allowed in most languages. The term 'marked' is generally understood to mean the rules that are lying outside of the core grammar. These rules are expected to be not only harder to acquire but also to be acquired on the basis of positive evidence of their availability in the L2 grammar, owing to their complexity, lower frequency and not used in all the world's languages (Chomsky 1981). Assuming this theory for the acquisition of the dative alternation, Mazurkewich concluded that the PD construction is the 'unmarked' structure while the DOD construction is the 'marked' structure. This conclusion was built on a criterion of productivity given that a large number of English dative verbs occur in the PD construction while only certain verbs can

occur in the DOD construction. The DOD construction is a subset of the PD construction. The significance of this theory for language acquisition is presented by Mazurkewich (1985: 16) who claimed that:

> 'The prediction made by such a theory is that as soon as the linguistic input triggers a learner's awareness of the existence of a core rule in the grammar, that rule not only would be learned easily, but it would be learned on the basis of minimal exposure to that language as it is predicted of UG. In the case of noncore or marked rules, the prediction is that they would have to be learned on the basis of positive evidence of their existence in that grammar.'

It might be said that Mazurkewich's data (1985) can be understood as the acquisition order is not only a result of markedness, but also of positive transfer, particularly among the French speakers owing to the fact that dative constructions with a nominal indirect object in French are identical to the English PP construction (Kayne 1983). One of the problems with this explanation is that Mazurkewich (1981, 1984, 1985) ruled out this possibility of transfer since the same acquisition sequence is followed by Inuit participants. However, her interpretation cannot be justified due to the fact that the Inuit participants had been educated in English. Kellerman (1985: 100) replied to Mazurkewich's study and stated that:

> 'The effects of cross-linguistic influence cannot be easily ruled out. The French subjects may express a preference for [NP-PP] dative structures because they reflect French and are highly frequent in English in any case …There is little difference between Inuit and native speaker performance on the acceptable dative structures … since they were educated in English.'

Another major problem with this approach came from Hawkins (1987) who pointed that describing certain linguistic constructions as 'unmarked' or 'marked' is not an explanation for the constructions. He (1987: 25) stated that:

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'To say that [NP-PP] datives are unmarked because they are easier to learn for L2 learners, and that [NP-NP] are marked because they are harder to learn, or to say that [NP-PP] dative are unmarked because they are linguistically more productive than the marked [NP-NP] datives, are not explanations in themselves; they are mere labels for a particular distribution of the data.'

Mazurkewich concluded that the markedness is the best interpretation for her findings and this interpretation was criticised and described as premature interpretation by some researchers such as Le Compagnon (1984); Kellerman (1985); Hawkins (1987). Hawkins (1987: 28) stated that:

'It has never been clear that principles proposed by linguistic theory can be directly translated into models for representing cognitive knowledge, whether it be language acquisition, language storage or language processing.'

However, some of these researchers agreed with Mazurkewich that the PD construction is more productive than the DOD construction. By way of illustration, Hawkins (1987: 46) stated that:

'What we have found is that Mazurkewich's original discovery that [NP-PP] construction is acquired prior to the [NP-NP] construction is not the only factor involved in the acquisition of the dative alternation; in fact, it represents only one point of stage 2 in the acquisition sequence when learners accept lexical NPs in the [NP-NP] frame with some verbs, but not all verbs. To single out this point of the acquisition process and raise it to the status of a general principle of language acquisition determined by UG seems to me misreading the facts.'

Another study investigating the acquisition of the dative alternation by L2 learners is by Hawkins (1987), who reexamined the acquisition of the English dative alternation by native speakers of French. Two types of questionnaire were prepared for this study: a grammaticality

judgment test similar to Mazurkewich's task (1981) and a sentence-construction test (a production task). Hawkins (1987), however, included a wider range of verbs than Mazurkewich did. In the first task, the participants were given 72 sentences to judge whether they expressed good English or not. In the second task, the participants were given reduced sentences of the form *John pass Mary the letter*, where verb inflections and prepositions had been removed. They were instructed to express the sentence in past tense and add the appropriate preposition, 'to' or 'for' if necessarily.

The results of this study are similar to Mazurkewich (1981). The participants judged the PD construction to be more acceptable than the DOD construction. Hawkins's findings also showed that the participants found *to*-dative verbs more acceptable than *for*-dative verbs. They also distinguished between the *to*-and *for*-dative relying on whether the indirect object was definite or indefinite. *To*-dative verbs seemed to be acceptable with either definite or indefinite direct objects, whereas *for*-dative verbs with definite direct object in the DOD construction seemed to be less acceptable. For instance, *I sent John a letter* and *I sent John the letter* were both acceptable, whereas *He washed John a shirt* appeared more acceptable than *He washed John the shirt*. Furthermore, the participants differentiated between the nominal indirect object and pronominal indirect object in the DOD construction. Sentences such as *Could you wash me some socks?* Were more acceptable than sentences such as *Could you wash Lisa the dishes?* Mazurkewich (1981) concluded that the acquisition of the English dative alternation undergoes a sequence of stages: first, the participants preferred the DOD construction with pronominal indirect objects. The second stage, they permitted nominal and pronominal objects to appear in just one of the forms PD or DOD or with one of the two major subsets of dative verbs: *to*-dative verbs or *for*-dative verbs. Finally, they realised the difference between the polysyllabic and monosyllabic verbs, but they still overgeneralised the rule of alternating verbs to non-alternating verbs, as exemplified in: *She donated Oxford some money*.

In light of these findings, Hawkins (1987) argued that markedness cannot be considered as the only element included in the acquisition of the dative alternation. However, it shows only one

stage of the acquisition process. Hawkins also found that the acquisition of the English dative alternation as L2 is a complicated phenomenon which cannot be interpreted by the markedness theory alone; it possibly will be explained in terms of learning complexity in which learners proceed from an initial broad generalisation about the dative alternation which is subsequently refined by the addition of syntactic/morphological features to their grammar.

Moreover, he argued that an 'operating principle' or 'one-to-one principle' (one construction, one meaning) plays an increasingly important role in the acquisition of the PD construction earlier than the DOD construction. This principle claims that learners think, until they receive positive evidence to the contrary, that each surface construction is paired with exactly one meaning. In fact, the dative alternation violates this principle. Nonetheless, learners initially believe that the surface difference corresponds to a certain underlying difference, and the feature they seem to single out is pronominally; that means, one of the surface structures is initially pronominal, and the other includes NPs.

A further study carried out by Le Compagnon (1984) who investigated the influence of L1 on the acquisition of the English dative alternation by native speakers of French. The data were collected from two case studies as well as two judgment tests done by four French native speakers. The first case was conducted with Gilles who was 33 years old. He was taught English in the secondary school. This study was run out from February 6 to May 30, 1982. The second case, however, was conducted with Fabienne who was 27 years old. The study was run out from September 12 to November 15, 1982.

The judgment test was composed of two parts. The first test was a developed version of Mazurkewich (1981). It consisted of 16 dative verbs; eight were *to*-dative verbs such as 'send,' and these were subdivided into two categories: five alternating verbs such as ('send', 'give', 'throw', 'lend' and 'read') and three non-alternating verbs such as ('suggest', 'explain' and 'report'). The next eight verbs were *for*-dative verbs such as 'make'. This group also was subdivided into two categories: five alternating verbs as ('make', 'save', 'bake', 'buy' and

'choose') and non-alternating verbs as ('create', 'capture' and 'design'.) These dative verbs were presented with a full noun indirect object in two different syntactic structures: the PD and the DOD, as illustrated in the following pair of sentences:

(98)   a. John sent a postcard to Carol.
       b. John sent Carol a postcard.

In addition to dative verbs, there were five sentences that did not present dative verbs as (99) shows:

(99)   Andrew chased Richard upstairs.

The second test was given a week later in which the same sentences were investigated; only this time the full noun indirect object was replaced by a pronoun indirect object. The participants' task in these two tests was to judge the grammaticality of these English sentences.

It was expected that French learners of English would accept the full noun indirect object following the direct object as in (100); such an example would be accepted based on the L1 knowledge and the positive evidence. It also would be categorised as an unmarked form and thus the structure will be applied to all dative verbs.

(100) I gave the book to John.

However, examples such as (101) will be categorised as a marked form and will not generalise without positive evidence. This example would be judged as ungrammatical.

(101) Cathy gave Kevin a book.

Moreover, it was expected that with unfamiliar *to*-datives with indirect object pronoun as in (102) would be grammatical since the indirect object follows the verb.

(102) Cathy gave you a book.

However, example (103) which shows the indirect object pronoun in the PD structure would be expected as ungrammatical.

(103) Pete threw a football to him.

Regarding *for*-datives, it was predicted for French leaners to accept the indirect object pronoun with either of the PD and the DOD structures as the pair of sentences in (104). They ought to be treated as unmarked for different reasons and therefore generalised to all *for*-datives.

(104) a. I bought a present for her.
         b. I bought her a present.

The results of the case studies show that Gilles and Fabienne used the DOD structure with a pronoun indirect object as the unmarked structure regardless of the dative verbs used, as shown in the following examples:

(105) *He said me that yesterday.   By Gilles.
(106) *I described them how to make it.   By Fabienne.

On the other hand, they used the PD structure consistently with the noun indirect object as in the following examples:

(107) My parents rented the house to someone else.   By Gilles.
(108) He wants to sell the furniture to someone.   By Fabienne.

The results of judgment tests are identical to the result of the previous case studies in which the DOD structure was accepted as a grammatical structure with a pronoun indirect object. However, the PD structure was accepted as grammatical with the noun indirect object. The overgeneralisation made by these L2 learners is due to the misassumption concerning marked and unmarked structures in English for which there is positive evidence in both L1 and L2. These results were interpreted as evidence of the influence of the grammatical structure of L1 on the acquisition of L2. It can also be said that the results support the prediction that the strategy used to judge the pronoun indirect object is different from the strategy used to judge the noun indirect object. These strategies may be built on the L1 knowledge. Consequently, L2 learners differ from each other as their L1 differs.

An additional study was conducted by Tanaka (1987) who investigated the acquisition of two give structures: the PD and the DOD by Japanese college students within a framework of transfer and markedness. She argued that markedness and transfer operate simultaneously. She further claimed that L2 learners acquire unmarked structures that are allowed in their L1 more easily and earlier than marked structures that do not exist in the L1. Moreover, this study was concerned with three types of constraints governing the dative alternation: discourse, semantic and perceptual.

The sample of this study was made of 115 male and 157 female students who were taught English as a foreign language more than six years. These participants were asked to do a proficiency test to classify them into three different levels of English proficiency: low, intermediate and high.

Two tasks were given to the participants: the translation test which had three Japanese sentences typed on separate cards. Their task was to translate these sentences into English. The second test was an acceptability judgment test which was composed of six categories in three pairs of sentences: the first category marked the indirect object as new information as in (109):

(109) a. John gave the book to a boy.

b. *John gave a boy the book.

In the second category, the direct object is a heavy NP and marked as inanimate as in (110):

(110) a. James gave a punch in the eye to Cathy.

b. James gave Cathy a punch in the eye.

The third category is composed of a light NP direct object and marked as inanimate as the following example:

(111) a. *George gave a headache to Rose.

b. George gave Rose a headache.

In the next category, the subject was non-human and the direct object was inanimate, as (112) shows:

(112) a. *Overwork gave a heart attack to Bill.

b. Overwork gave Bill a heart attack.

The penultimate category is the opposite of the previous category, in which the indirect object was inanimate and the subject was human, as shown in (113):

(113) a. Thomas gave a kick to the ball.

b. Thomas gave the ball a kick.

The final category consisted of sentences which are 'prototypical' ones from the learner's perspective, as illustrated in (114):

(114) a. Harry gave a toy to the baby.

b. Harry gave the baby a toy.

The results of the translation test reveal that both the PD and the DOD structures were used with subtle preference for the PD structure. However, the PD structure was clearly preferred when the participants dealt with items deviating from the prototype.

The results of the acceptability judgment test showed that the participants were sensitive to a perceptual constraint which facilitates information processing such as in (112) more than discourse constraint which was subtler more than the semantic constraint. The participants appeared to prefer to use a 'play-it-safe' strategy when they dealt with unfamiliar structure. That means the judgment performance was affected by the deviation from the prototype. Tanaka concluded that both transfer and markedness are powerful forces which make the PD structure more preferable to the participants.

White (1987) investigated the acquisition of the dative alternation in L2 based on two distinct hypotheses: first, the developmental hypothesis which states that the unmarked pattern would be acquired earlier than the marked pattern an essential developmental stage. The second hypothesis was the transfer hypothesis which indicates that L1 has a significant influence on the acquisition of L2 and thus, marked patterns which are available only in the L1 may be acquired earlier than unmarked forms in the L2. She examined these two hypotheses by looking at how English native speakers acquire French dative verbs. Regarding the developmental hypothesis, it was expected that English native speakers would not express the DOD pattern given its markedness. With regard to the transfer hypothesis, it was predicted that the participants would produce the DOD forms owing to L1 transfer.

The experimental sample was made up of English-speaking adults who were 27 learners and children who were 120 learners acquiring French. The adult learners were given a randomised

list of written French sentences. These sentences were composed of eight ungrammatical cases of preposition stranding as in (115), five ungrammatical double object sentences as in (116), four grammatical cases of pied-piping as in (117), and three grammatical cases of the PD structure to a dative verb as in (118). Their task was to judge each sentence. The learners were requested to correct the ungrammatical sentences so as to ensure that they were judging the aspects of the sentences that the test concentrated on. The children participants were studied by two different kinds of grammaticality judgment tasks. First, they were provided with sentences to be judged in a limited time. The task proceeded in the following way: they read the sentences and heard them on a tape in the meantime. In this task, the learners only had three seconds to judge each sentence so as to prevent learners from having time to make conscious comparisons with the LI and to give a true picture of their initial reactions to the sentences.

(115) *Je me   demande   qui   elle   parle   avec
      I   wonder   who   she   speaks   with
      'I wonder who she speaks with.'

(116) *Pierre   achetera   son   fils   un   cadeau
      Peter   will buy   his   son   a   gift
      'Peter will buy his son a gift.'

(117) A qui   est-ce   que   Jean   a téléphoné?
      who   is it   that   John   phoned
      'Who did John phone?'

(118) Susanne   à expliqué   le probleme   à   son   mari
      Susanne   to explain   the problem   to   his   husband
      'Susanne explained the problem to her husband.'

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The second grammaticality judgment test was an unpaced task with a multiple-choice format which included 77 sentences. 15 contained the two constructions the researcher was focused on, including four ungrammatical cases of preposition stranding as in (119), three ungrammatical double objects as in (120), five cases of pied-piping as in (121), and three [NP PP] complements as in (122). The informants' task was to circle any ungrammatical sentences, to put a question mark by any sentences they were not sure of, and to leave untouched any grammatical sentences.

(119) *Quels   films   Hélène   est-elle   attirée par?
       what   films   Helene   is   attracted by?
       'What films is Helene attracted by?'

(120) *Aujourd'hui, un   ami   à donné   Claude   vingt   dollars
       today   a   friend gave   Claude   twenty   dollars
       'Today, a friend gave Claude twenty dollars.'

(121) Par   quels films Hélène   est-elle   attirée?
       by   which films Helene   is she   attracted?
       'Which films was Helene attracted?'

(122) Aujourd'hui, Claude   a emprunté vingt   dollars à   son   ami.
       today   Claude   borrowed   twenty   dollars to   his   friend
       'Today, Claude borrowed twenty dollars to his friend.'

The findings of the study clearly were in agreement with the transfer hypothesis. Both adults and children indeed judged the ungrammatical DOD sentences in French as good examples although they are not. Both adult and child subjects did accept the French illicit DOD structures more frequently than the native speaker participants.

White (1991) again looked at the influence of L1 on the acquisition of L2 argument structure, in two circumstances: L1 argument structures which are wider than L2 and vice versa. She investigated how English speakers acquire the French dative alternation. English is contrasted with French, which does not have the DOD construction and only has the PD construction. Therefore, L1 permits a wider range of argument structures than L2. Also, French motivates a range of constructions that are not allowed by English as in (122). She hypothesised that firstly, English learners of French will show evidence of using L1 grammar in the L2 by producing the structure does not appear in the L2 input as the French DOD construction which is shown in (123). Second, the learners may not be able to realise that French allows a number of structures that do not occur in their L1 by rejecting such structures as in (124):

(123) *Jean   a donné   Marie   le livre

       John   gave   Mary   the book

       'John gave Mary the book.'

(124) Antoinette   a traversé   rapidement   la rue

       Antoinette   crossed   quickly   the street

       'Antoinette quickly crossed the street.'

The sample of this study included 55 English children who studied French as an L2. These participants were put into three different groups: one was a group undergoing partial immersion (PI, n=18)[4]. Another group had had early total immersion (EI, n=17)[5]. The final group was undergoing submersion (Sub, n= 20)[6]. And the control group was made of 19 native speakers of French at the same grade level of the experimental participants. An unpaced preference task

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[4] They started French immersion at Grade 4, and were taught all academic subjects in French but had a daily class of English and were taught non-academic subject in English.
[5] They had had early total immersion since Kindergarten, with gradual increase in the use of English for instructional purpose from Grade 3 onwards.
[6] They had attended French school since Kindergarten and receiving all instruction in French with native speakers.

was prepared. This task was composed of 23 randomized pairs of sentence. The sentence in each pair consisted of the same lexical items, but they appeared in different structures. One sentence of the pair was well-formed in both L1 and L2, as shown in (125) and other sentence was well-formed only either in L1 or L2 respectively, as shown in (126). The participants' task was to judge these sentences by choosing the suitable options: the first seems better, the second seems better or they seem the same:

(125) Hier,   Pierre   a écrit   une   lettre   à   Marie
       yesterday, Peter   has written   a   letter   to   Mary
       'Yesterday, Peter wrote a letter to Mary.'

(126) a. *Hier,   Pierre   a écrit   Marie   une   lettre
          yesterday, Peter   has written   Mary   a   letter
          'Yesterday, Peter wrote a letter to Mary.'
       b. Antoinette   a traversé   rapidement   la rue
          *Antoinette   has crossed   quickly   the street
          'Antoinette quickly crossed the street.'

From the findings of this study, it was found that where L1 is a superset, the partial fit between L1 and L2 misled the learners to incorporate aspects of L1 argument structure into the interlanguage lexicon. Moreover, it was noticed that where L2 is a superset, two groups out of three (PI and Sub) were conservative and only taking structures that coincide with the L1. And one group (EI) judged the constructions as similar as the control group by accepting sentences that are allowed in the L2 but not in the L1.

Furthermore, Bley-Vroman & Yoshinaga (1992) investigated how learners of Japanese and Chinese, based on Pinker's (1989) theory, acquire the NRRs for the English dative alternation. The hypothesis put forward by Bley-Vroman (1989, 1990) was the FDH, which states that adult learners lack the ability to access UG, and, additionally, individuals who begin learning an L2

when they are older, as adults; merely possess the UG properties that are already present in their L1. To be specific, with a focus on the FDH, these experimenters argued that adult learners of L2 would use only a narrow range of verb types if relevant distinctions can be found within their L1; however, these adult L2 learners would neglect to use these verb types in their sentences if relevant distinctions are not apparent in their L1.

The experimental sample in this study came from 85 Japanese learners of English. And the native speaker comparison group was made up of 85 English speakers. The questionnaire consisted of 12 pictures accompanied by concise paragraphs; these 12 items were designed to describe the meaning of a verb (each detailed by Pinker to be in a narrow range class). There was an equal number of real and fabricated verbs; furthermore, there was an equal number of dativisable narrow range verbs classes ('Tell', 'Throw') and non-dativisable ones ('Whisper', 'Push').

Each of the 12 paragraphs preceded two basic sentences. The participants were then asked to judge the accuracy and grammaticality of the sentences on a seven-point Likert scale. The sentences either contained the PD or the DOD constructions, and naturally contained a verb that had been described in the paragraph beforehand. The study endeavoured to assess through this design whether the participants were aware of the relevant narrow range verb classes, and if they would therefore, when given a PD, apply the NRR and accept the corresponding DOD if the verb belonged to a dativisable subclass, or reject this method if the verb belonged to a non-dativisable subclass.

This study revealed that both English and Japanese participants, when confronted with a real verb, rated the DOD constructions containing dativisable verbs remarkably higher than those containing non-dativisable verbs. With the fabricated verbs however, the ability of the Japanese speakers to accurately discern which dativisable verbs and which non-dativisable verbs was drastically reduced. On the other hand, English respondents were still able to discern the

disparity between the two at a statistically significant level, even though the ability to distinguish between the two was much reduced when compared to their responses to real verbs.

This led Bley-Vroman & Yoshinaga to state that, when presented with the PD construction that contained made-up verb, Japanese speakers were unable to distinguish the grammaticality of the corresponding DOD construction, and they relied on a specific narrow range verb type since a host of narrow range verb types do not exist in Japanese, and therefore the possibility for such an eventuality has not been processed grammatically by the average Japanese adult. According to Bley-Vroman & Yoshinaga, only one dative form exists in Japanese, which corresponds with the DOD construction in English; therefore, Japanese does not include any narrow range dativisable verb classes whatsoever.

A further experimental study carried out by Sawyer (1996). His study replicated Gropen et al (1989) with some modifications. This study aimed to examine the extent to which adult learners of L2 are sensitive to the general semantic constraint. Specifically, the possessor constraint on the DOD structure, the BRRs and the NRRs which were suggested by Pinker (1989). This study adopted the FDH of Bley-Vroman (1989) which states that L2 learners can only acquire what is instantiated in their L1.

Pinker (1989) proposed two semantic applications which govern the English dative alternation: the BRRs which convert the PD structure 'X cause Y to go to Z' to the DOD structure 'X cause Z to have Y'. This rule is necessary but not sufficient to clarify why some verbs can alternate while other cannot. The second application is the NRRs which semantically divide English verbs into several classes, some of them are alternating while the rest are not alternating. The first application is language-universal. The second application is language-specific.

It was firstly hypothesised that not only native speakers of English but also Japanese leaners of English will produce the DOD structure with animate goals 'Joe' more than inanimate goals 'a trophy' due to their sensitivity to the BRRs. Secondly, English native speakers can differentiate

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between the Throw class verbs and the Push class verbs owing to their access to the NRRs. However, Japanese learners will not distinguish between these two verb classes as the NRRs are irrelevant to Japanese as assumed by Sawyer (1996).

25 English speakers took a part as a control group. 33 Japanese speakers participated as the experimental group. The target items were two novel verb stems from Gropen et al. (1989), 'norp' and 'doak', three novel verb stems derived from existing English nouns 'track', 'tube' and 'pan', and three existing English verbs 'give', 'toss' and 'push'.

Table 7. Shows the production of the DOD forms (%), by verb classes and verb origin						
Verb origin	Derived		Novel		Real	
Recipient type	NS	NNS	NS	NNS	NS	NNS
Self (me)	48	24	29	19	36	27
Animate (Joe)	38	02	18	16	32	16
Inanimate (trophy)	18	11	08	12	11	05
NS = native speakers NNS = non-native speakers						

The results of this study are consistent with the first hypothesis which is all the participants would produce the DOD structure with animate goals more than with inanimate goals. The results are presented in Table 7.

Table 8. Shows the production of the DOD forms (%), by type of recipient and verb origin						
Verb origin	Derived		Novel		Real	
Verb class	NS	NNS	NS	NNS	NS	NNS
Ballistic motion	57	25	19	19	35	21
Continuous motion	13	11	17	13	18	12

As can be seen in Table 8, the results of this study are not in agreement with the second hypothesis which is only native speakers of English would be able to differentiate between the Throw class verbs and the Push class verbs. What was found is that also Japanese learners of English were sensitive to the NRRs and distinguish between these two verb classes. A possible interpretation for this result suggested by Sawyer (1996: 655):

'The non-native speakers were acting upon a principle of object affectedness, which gave them at least a vague sense that recipients of ballistically propelled thing are more likely to be affected than recipients of continuously moved things, and are therefore more likely to qualify as direct object. One reason why these might be so is that the complete path of the ballistic motion is determined at the point of the initiation of the motion; it is relatively clear whether it will reach the recipient or not. Continuous accompanied motions, on the other hand, can stop or change direction at any time before reaching the recipient.'

He concluded that the findings corroborate the findings of Gropen et al. and the findings of Bley-Vroman & Yoshinaga (1992) regarding the native speakers' sensitivity to the NRRs. They further support the idea of semantic structure theory by Pinker (1989). The results of this study also indicate the sensitivity of non-native speakers to the NRRs. In this sense, they disconfirm the second hypothesis and provide evidence against the FDH as applied to the semantic constraints on argument structure.

An additional study was conducted by Inagaki (1997) who investigated the acquisition of NRRs governing the dative alternation by adult Japanese and Chinese learners of English. He concentrated on four verb classes: verbs of type of communication message (Tell class), verbs of manner of speaking (Whisper class), verbs of instantaneous causation of ballistic motion (Throw class) and verbs of continuous causation of accompanied motion in some manner (Push class). English varies slightly from Japanese and Chinese in the verb classes that were in question. Both English and Japanese permit the Throw class verbs to occur in the DOD

construction but not Chinese. Moreover, neither English nor Chinese allow Whisper class verbs to appear in the DOD construction. All three languages seem to be not only strikingly similar in allowing the Tell-class verbs to occur in the DOD construction but also in disallowing the Push class verbs to appear in the DOD construction. A summary of these differences are shown in Table 9. This is adopted from Inagaki (1997: 646).

Table 9. Verb classes and their occurrence in the DOD construction in English, Japanese and Chinese				
Languages	Throw class	Push class	Tell class	Whisper class
English	Yes	No	Yes	No
Japanese	Yes	No	Yes	Yes
Chinese	No	No	Yes	No
Note: Yes: DOD allowed; No: DOD not allowed.				

To investigate how these verb classes will be acquired by these experimental participants, the researcher adapted the FDH which states that adult L2 learners will not be able to access UG. Thus, learners who start acquiring an L2 as adults, will acquire the UG properties that are available in their L1. The following four hypotheses were formulated. First, native speakers of English will not only be able to distinguish the DOD structure containing the Throw class verbs form those containing the Push class verbs but also the DOD structure containing the Tell class verbs form those containing the Whisper class verbs. Second, Japanese learners of English will have the ability to differentiate between the DOD structure containing the Throw class verbs and those containing the Push class verbs, but not the DODs containing the Tell class verbs form those containing the Whisper class verbs. Third, Chinese learners of English differ significantly from Japanese learners by distinguishing the DOD structure containing the Tell class verbs from those containing the Whisper class verbs, but not the DOD structure containing the Throw class verbs form those containing the Push class verbs. Finally, if the learners are able to distinguish DOD structure, all the participants will perform better with real verbs than made-up verbs.

The experimental participants included 32 native speakers of English, 32 native speakers of Japanese and 32 native speakers of Chinese. A written questionnaire was prepared to investigate this phenomenon. The questionnaire was divided into two parts. The first part contained eight made-up verbs which were selected from the four investigated verb classes. This part was modified of Bley-Vroman & Yoshinage's questionnaire (1992) in which eight paragraphs were presented with pictures. Each paragraph composed of a made-up verb and the context of the paragraph and the picture provided the meaning of the made-up verb. Each paragraph was followed by two sentences using the made-up verb, one in the PD construction and the other in the DOD construction followed by a seven-point Likert scale from -3 (completely impossible in English) through 0 (unable to decide) to 3 (completely possible in English). The participants were asked to read and understand the paragraph so as to judge the grammaticality of each sentence by circling a number from the scale. The second part was composed of eight pairs of sentences. Each pair of sentences contained two real English verbs from the same verb class. These sentences were just presented by themselves. Each pair was composed of a sentence in the PD construction and the other sentence in the DOD construction. Each sentence was followed by the same seven-point Likert scale. The participants were instructed again to judge the acceptability of each sentence by circling a number from the scale.

The findings of this investigation showed the unexpected result that Japanese participants were able to distinguish the DOD construction containing the Tell class verbs from those with the Whisper class verbs, even though these two verb classes are not distinct with regard to dativisability in their L1. The researcher argued that the unexpected results were due to the reliance on the frequency of a particular verb appearing in the DOD construction, forced by the lack of the dative alternation in Japanese. The finding, also, revealed an expected result that Japanese participants did not distinguish the DOD construction containing the Throw class verbs from those with the Push class verbs since these two verb classes are distinct with regard to the dativisability in Japanese.

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In terms of Chinese participants, it was observed that they distinguished the DOD construction containing the Tell class verbs from those with the Whisper class verbs owing to the differences between these two verb classes regarding dativisability in Chinese. They were not be able to distinguish the DOD construction containing the Throw class verbs from those containing the Push class verbs since these two verb classes are not distinct with respect to dativisability in the L1. Inagaki (1997: 662) argued that:

> 'I argued (a) that the unexpected result for the Japanese speakers stems from their reliance on the frequency of a particular verb occurring in the DOD construction, triggered by the lack of a dative alternation in Japanese; and (b) that the Chinese speakers' results would depend on transfer from the L1 (as predicted in the FDH) triggered by the existence of a dative alternation in Chinese.'

Based on these results, Inagaki (1997) suggested that the acquisition of the English dative alternation by adult L2 learners is governed by the properties of an equivalent structure in the L1 relative to the properties of the target structure.

A further study was carried out by Whong-Barr & Schwartz (2002) who investigated the acquisition of the English DOD construction by child L2 learners. This paper aimed to examine whether L2 children overgeneralise the DOD construction as L1 children. It also sought to explore whether L2 children transfer structures of their L1 grammar. They tested FT/FA approach of Schwartz & Sprouse (1996) which states that the initial state of L2 acquisition is the L1 grammar and that L2 development occurs through UG constrained restructuring as target language input conflicts with what the current state of the interlanguage grammar can generate. In regard to the phenomenon under the study here-dative alternation constructions-since the L2 learners' L1s are different FT/FA argues that their L2 initial states will be different and therefore predicts that their L2 developmental paths will also necessarily vary. Based on this statement, it was hypothesised that first, according to the authors, there is no *to*-dative verbs allowed to

appear in the DOD structure in Japanese and Korean, the expectation is that Japanese-speaking and Korean-speaking children will, given the L1 influence, initially disallow the DOD construction and only accept the PD construction and they will overgeneralise as in the L1 English acquisition. Second, because of the fact that Japanese does not allow the DOD construction with *for*-dative, the expectation can be that Japanese children will initially be restrictive and then overgeneralise the DOD construction with *for*-dative verbs. Moreover, with regard to the acquisition of the English DOD construction with *for*-dative verbs by Korean children, based on Montrul's (1997) work on the influence of L1, there are two different hypotheses. One of which is that since Korean allows the DOD construction with a wider range of *for*-dative verbs than English does, these learners will overgeneralise the DOD construction with *for*-dative verbs from the beginning. The other hypothesis is that owing to the fact that Korean requires an overt morphological licensor of the DOD construction with *for*-dative verbs, Korean children will initially be restrictive. These hypotheses can be summarised as follows. Since Japanese allows neither *to*-dative nor *for*-dative verbs to appear in the DOD structure, Japanese learners of English will initially be conservative by rejecting all the grammatical DOD structure and then they will overgeneralise them as the acquisition of English native speakers due to their L1 influence. On the other side, Korean only allows *for*-dative verbs to occur in the DOD structure once the *cwu* morpheme is presented. Therefore, they will reject all the grammatical DOD structure with *to*-dative verbs and then overgeneralise them as English children trigged by the effect of their L1. They may neither acquire the DOD structure with *for*-dative or undergenerlaise it due to the superset of their L1.

The experimental participants in this study were five Korean children who were eight-years old and five Japanese children who were seven-years old. Six English children who were eight-years old also took apart in this study as control group.

An oral grammaticality judgment task was carried out to examine the use of the DOD structure. There were four types of DOD structures: grammatical and ungrammatical goal DOD sentences, as shown in (127) and (128), respectively, and grammatical and ungrammatical ben DOD

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sentences, as shown in (129) and (130) respectively. These types were examined for five different verbs.

(127) a. The sheep sent the book to the pig.

b. The sheep sent the pig the book.

(128) a. The tiger whispered the secret to the pig.

b. *The tiger whispered the pig the secret.

(129) a. The tiger found a spoon for the sheep.

b. The tiger found the sheep a spoon.

(130) a. The tiger held the money for the sheep.

b. *The tiger held the sheep the money.

Table 10. Shows a summary of the results of Whong-Barr & Schwartz's (2002) study			
To-dative	Grammatical	Japanese learners	Accepted
		Korean learners	
	Ungrammatical	Japanese learners	overaccept
		Korean learners	
For-dative	Grammatical	Japanese learners	Accepted
		Korean learners	
	Ungrammatical	Japanese learners	overaccept
		Korean learners	Reject

The results generally can be summarised by outlining that Japanese learners accepted all the grammatical DOD structure with *to*-dative and *for*-dative verbs and overaccepted all the ungrammatical DOD structure. However, Korean learners accepted all the grammatical DOD structure and rejected the ungrammatical DOD structure with *for*-dative verbs but they

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overaccepted the ungrammatical DOD structure with *to*-dative verbs. These results are further figured in Table 10. The results of this research supported the idea of the morphological transfer hypothesis which states that the disparity between the L1 and the L2 morphological items will probably hinder and constrain the acquisition of syntactic features in the L2. This support can be realised especially when they come to the domain of ungrammatical DOD constructions. All the participants judged the grammatical DOD constructions as good examples of English. Regarding the ungrammatical DOD constructions, Korean participants' performance was similar to the control group's performance by correctly rejecting the ungrammatical ben DOD construction and overaccepting the ungrammatical goal DOD construction. Japanese participants did overaccept both of the ungrammatical constructions.

In conclusion, this section has given a quite deep descriptive account of some previous studies in the acquisition of the dative alternation in L2. It has been argued that the PD structure can be acquired earlier than the DOD structure. This argument was built on the investigation of the markedness theory by Mazurkewich (1981, 1984, 1985) in which the PD construction was considered as 'unmarked' form while the DOD construction was considered as 'marked' form. Moreover, Tanaka (1987) stated that the PD structure is acquired earlier that the DOD structure due to the L1 transfer and markedness. However, Hawkins (1987) postulated that markedness only presents the initial stage of such acquisition order and the L2 learners are directed by the 'one-to-one principle'. White (1987, 1991), Whong-Barr & Schwartz (2002) and Le Compagnon (1984) concluded that adult L2 learners acquire the dative alternation relying on the L1 property. Their findings were in agreement with the transfer hypothesis. Moreover, Bley-Vroman & Yoshinaga (1992) and Inagaki (1997) found that the acquisition of dative alternation as an L2 is determined by the characteristics of the equivalent structure in L1 relative to the characteristics of L2 structure.

3.5 Research topics

3.5.1 Research topics of the L2 English study

The current English study intends to explore how Arab learners of English express certain verb classes in English: verbs of act of giving, verbs of type of communication and verbs of ballistic motion. More specifically, to what extent can these learners realise the grammaticality of the Throw class verbs with the DOD construction in English as *Ellis threw Peter the pen*? It additionally seeks to probe whether Arab learners of English are able to recognise that certain verbs in the Give class such as 'pay' and the Tell class such as 'write' in are allowed to occur in the DOD construction. Finally, it examines these learners' awareness of the ungrammaticality of the SD constructions in English such as those *Noah sold the car Billy* and *Noah sold to Billy the car*.

3.5.2 Research topics of the L2 Arabic study

The Arabic study proposes to investigate how verbs of act of giving, verbs of type of communication and verbs of ballistic motion are expressed in Arabic by native speakers of English. It is specifically probing whether these learners can realise the grammaticality of the SD structures in Arabic as the following examples:

(131) a. أعطى أحمدُ إلى محمدٍ الكتابَ

a'ta	ahmed-u		ela	mohammed-in	alkitaab-a
gave	Ahmed-Nom		prep	Mohammed-Gen	the book-Acc

'Ahmed gave the book to Mohammed.'

b. ركلَ أحمدُ إلى محمدٍ الكرة

rakala	ahmed-u		ela	mohammed-in	alkorat-a
kicked	Ahmed-Nom		prep	Mohammed-Gen	the ball-Acc

'Ahmed kicked the ball to Mohammed.'

c. أعطى أحمدُ الكتاب محمدًا

a'ta	ahmed-u	alkitaab-a	mohammed-an
gave	Ahmed-Nom	the book-Acc	Mohammed-Acc

'Ahmed gave Mohammed the book.'

It also explores the English learners' ability to unlearn structures that are not allowed in Arabic such as the following sentence:

(132) رمى فايزٌ زيدًا القلمَ

* rama	fayez-un	zaid-a	alqalam-a
threw	Fayez-Nom	Zaid-Acc	the pen-Acc

'Fayez threw Zaid the pen.'

Chapter 4 The experimental studies: the L2 English and the L2 Arabic

4.1 Introduction

This chapter intends to report an extensive description of four points. It starts with the presentation of the experimental investigation of the acquisition of the English dative alternation by Arabic native speakers. It will then go to comprehensively describe the experimental investigation of the acquisition of the Arabic dative alternation by native speakers of English. Before illustrating how the data of this bidirectional study were analysed, the procedure of the data collection for the L2 English study and the L2 Arabic study is presented.

4.2 The L2 English study

4.2.1 Introduction

The primary purpose of this section is to highlight the empirical study carried out to investigate how Arabic-speaking English learners acquire the dative alternation in English. This part endeavours not only to provide the reader with a wide view of the motivation of the present study and its hypotheses but also to illustrate the methodology employed in this study by presenting the process of choosing the participants and the materials.

4.2.2 The motivation of the current study

The current study seeks to explore to what extent semantic constraints play a crucial role in mapping verb classes onto different syntactic configurations. Firstly, the extent to which the acquisition of the semantic constraints assists L2 learners to map the investigated verb classes onto different argument structures that are not allowed in their mother tongue. Secondly, how well L2 learners unlearn argument structures that do not exist in the L2 grammar. Finally, which dative structure do L2 learners early acquire? With the objective of addressing these matters,

this study will deal with the dative alternation. The variances between Arabic and English in this domain provide an interesting case for investigating these issues.
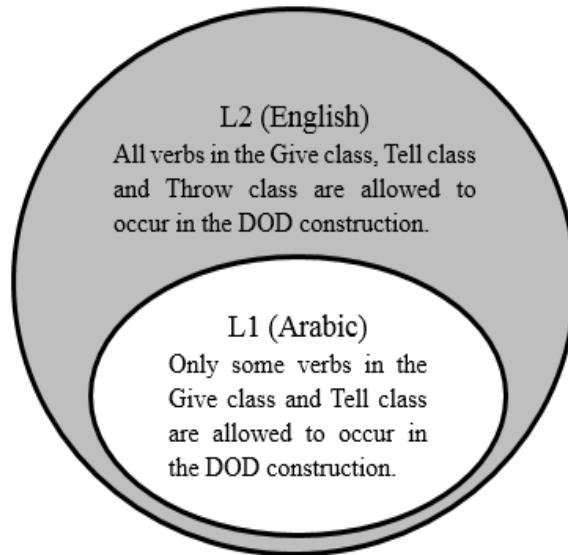
Figure 3. Superset L2 (English) - subset L1 (Arabic)

A first investigation is how verb classes can be mapped onto a variety of argument structures and how the semantic constraints affect the mapping of those argument structures onto different syntactic configurations. This will be conducted through an investigation into how well native speakers of Arabic acquire the English dative alternation. With the intention of addressing this question, the study concentrates on the acquisition of three verb classes in English: act of giving verbs, type of communication verbs and ballistic motion verbs. English allows all these verb classes to appear in the DOD form. Arabic, on the other hand, only allows some verbs in the act of giving class such as the equivalent of 'sell' and the type of communication class such as the equivalent of 'show', as illustrated schematically in Figure 3.

A hypothesis tested in this study is that even though the equivalent of ballistic motion verbs and certain verbs in the act of giving class such as 'pay' and the type of communication class such as 'read' are not allowed to occur in the DOD construction in Arabic since these dative verbs violate the Arabic semantic constraints, Arab learners of English, to a great extent, are able to

acquire such verbs with the DOD construction. This hypothesis is built on the presumption that positive evidence is available to Arabic-speaking learners of English.
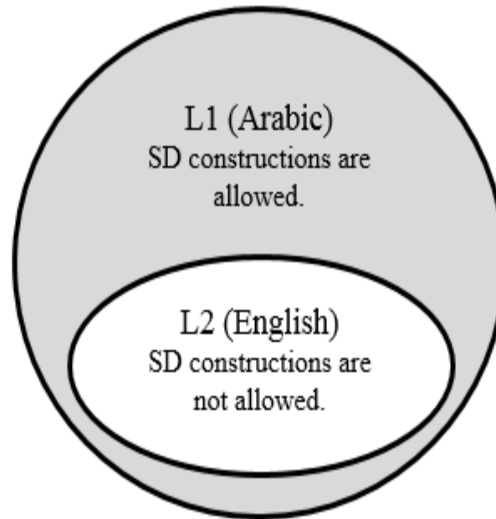
Figure 4. Superset L1 (Arabic) - subset L2 (English)

The second issue that will be explored in this study is to determine the value of negative evidence when the argument structures in L1 are wider than their L2 counterparts, as shown in Figure 4. A further hypothesis is that Arab learners of English will face difficulty learning that SD constructions are grammatically ill-formed in the L2 grammar.

The hypothesis for English participants would be formulated as follows: all basic constructions would obtain a positive rating and all SD constructions would be treated as ill-formed examples of English. On the other hand, the hypothesis for the experimental participants would be formulated as follows: they would accept not only all SPD constructions, but also BDOD and SDOD constructions with 'give', 'sell', 'hand', 'tell' and 'show' as grammatical sentences. This is due to that fact that these typical constructions are used in their L1. In addition, they would positively rate the BDOD construction with 'pay', 'read', 'write', 'throw', 'kick', 'toss' and 'shoot' but not with the SDOD construction. Since these learners will be exposed to the BDOD structure but not to the SDOD structure due to its ungrammaticality in both languages.

The third issue that will be explored in this study is to investigate the earlier acquisition of English dative structures. The hypothesis for this investigation is that the PD construction will be acquired earlier than the DOD construction. This hypothesis was built on the previous studies such as Mazurkewich (1981, 1984, 1985) and Hawkins (1987) whose findings were that the PD structure is early acquired by L2 learners.
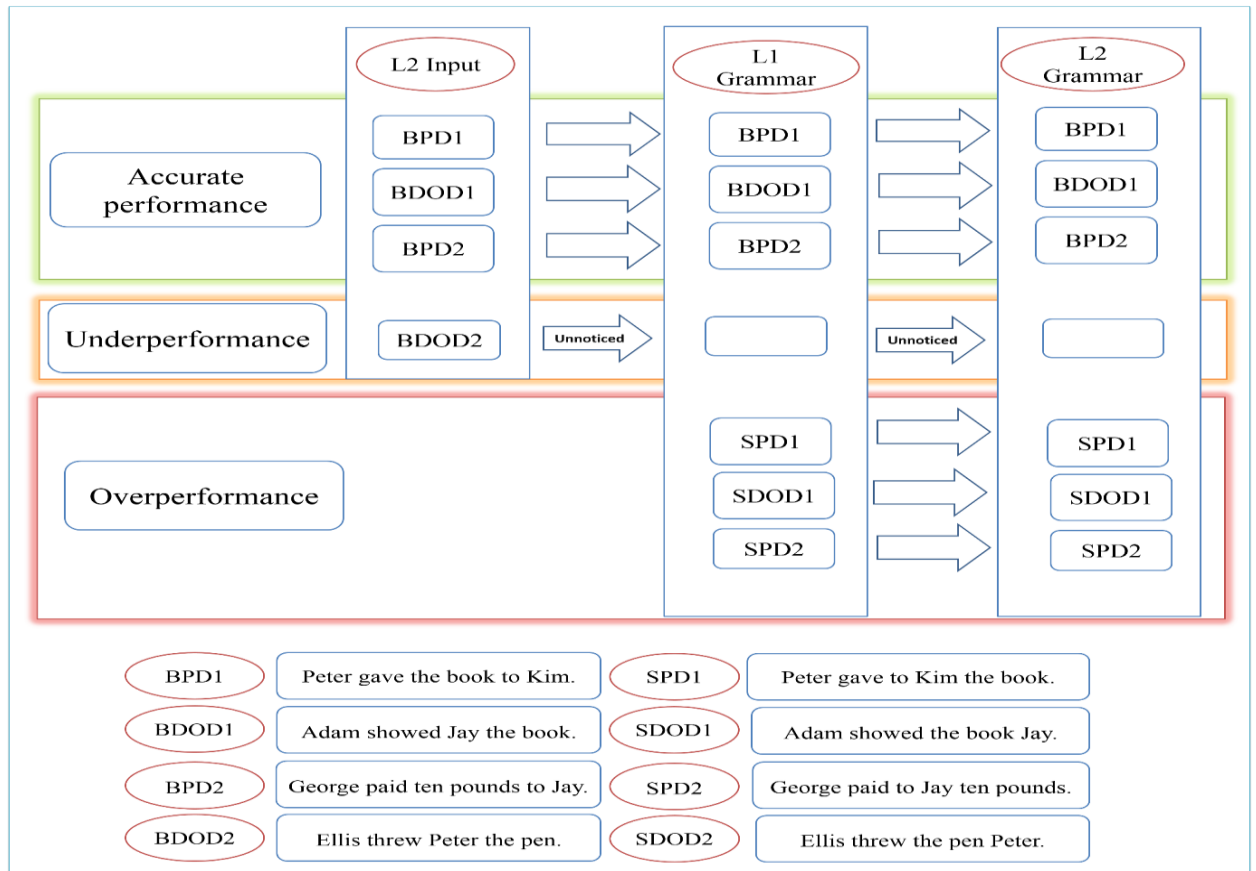
Figure 5. An illustration of the dilemma of the acquisition of the English dative alternation by Arabic speakers

The dilemma of the acquisition of the English dative alternation by Arabic native speakers may be illustrated, as can be seen in Figure 5. The leftmost box shows the structures that are available in the L2 input, the middle box illustrates the L1 grammar and the rightmost box the resultant L2 grammar. The leftmost box includes both basic structures, the PD and the DOD with the two

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verb classifications. It could be assumed that the L2 input is filtered through the L1 grammar (Inagaki 2002). Available in the L1 grammar, however, will be all the PD constructions, basic and scrambling, with the two verb classifications. It also contains the DOD constructions, basic and scrambling, with first verb group. In other words, the L1 grammar allows not only all the structures that are grammatical in the L2 input except the BDOD2, but also all the scrambling structures excluding the SDOD2. Consequently, Arab learners of English may possibly identify that there is a partial fit between their L1 and L2 which might mislead them and cause possible problems. In such a case, Arab learners of English will face two kinds of circumstance: L2 allows a superset of structures that are not acceptable in their L1, as shown in Figure 3 and L2 allows a subset of structures that are grammatical in the L1, as shown in Figure 4. These two circumstances will be further described based on the acquisition of the English dative alternation by native speakers of Arabic, since these two languages have overlapping sentences types.

The first circumstance is the acquisition of structures that do not occur in their L1. This is the case between English and Arabic dative alternation, as Figure 3 shows. English allows a wider range of verbs more than Arabic to occur in the DOD construction. In other words, English structures correspond to a superset of those in Arabic by allowing the BDOD2 structure. In such a situation, having perceived the overlap between English and Arabic will mislead Arab learners of English to presume that Arabic and English grammatically are identical. Such presumption may probably lead these learners either to draw attention to the English input which is only similar to the Arabic grammar and assume that Arabic grammar is applicable for acquiring the English dative alternation. Hence, they will be too conservative and fail to incorporate English properties that are not allowed in the Arabic grammar. Or, to realise that certain various structures are allowed in English even though such properties are unacceptable in Arabic, and therefore they can acquire English grammar due to the availability of positive evidence to them on this structure. The acquisition of this structure based on the FDH is impossible due to the absence of such structure in the L1 grammar. Moreover, the RDH argues that this structure cannot be acquired owing to the absence of this uninterpretable feature in the L1grammar. In terms of the FT/FA approach, it is speculated that Arab learners will initially transfer their L1

grammar hence they will not acquire such structure due to its ungrammaticality in their L1. Late, they will acquire this structure once the input cannot be analysed by the L1 grammar.

On the other hand, the second circumstance is the unlearning of structures that are not allowed in the L2 grammar. This is evident in the case of dative structures in Arabic and English, as can be observed in Figure 4. The SD structures are unacceptable in English but are acceptable in Arabic. Regarding the partial fit between these two languages in the acceptance of the SD structures, if the L1 is Arabic and English is the L2, the Arabic structures present the superset case by permitting the SD structures. It might be claimed that any output of the L2 grammar may be created by the L1 grammar which allows certain structures that are not grammatical in the L2. The partial fit between Arabic and English may possibly mislead Arab learners to transfer their L1 grammar and take it as an appropriate way to acquire the L2 grammar. If this takes place, Arab learners of English ought to presume that certain structures, in fact not allowable in English, are allowed. The transfer of Arabic grammar, to a great extent, is motivated by the overlap between these two languages which leads these learners to presume that their L1 and L2 are identical and presents a form of overgeneralisations (White 1991).

To predict the acquisition of the English dative alternation by Arab learners of English, it is indispensable to distinguish between the two circumstances discussed above. On one hand, in the first case, two possibilities were mentioned above; however, Arabic speakers who are at a high proficiency level (the upper-intermediate) will not struggle to learn the structure is not allowed in their L1 (BDOD2) owing to their frequency in the L2 input. Those participants who are at a low proficiency level (the pre-intermediate) may, to some extent, struggle to acquire such structures as they need to be exposed to the language for a while to arrive at the L2 grammar. On the other hand, the acquisition of the second case can be expected as all Arabic-speaking learners of English will face difficulties restructuring from the SD structures. Moreover, the FDH assumes that these learners cannot overcome from overgeneralisation because of the inability of accessing UG. It is also assumed by the RDH that these learners may not be able to restructure themselves since they cannot access UG when it comes to

uninterpretable features. The FT/FA approach assumes that initially these learners will fully transfer their L1 grammar and accept these ungrammatical structures. Once these learners cannot analyse the L2 input based on the L1 grammar, they will fully access UG and reject what are ungrammatical structures in their L2 such as SD structures.

The prediction of the early acquisition of the dative structure is built on certain previous studies such as Mazurkewich (1981, 1984, 1985) and Hawkins (1987) and on recent studies such as Anderssen et al. (2014), Baten & De Cuypere (2014) and Jäschke & Plag (2015). These studies found that the PD construction is earlier acquired than the DOD construction. It was predicted that the English PD construction would be first acquired by Arabic native speakers.


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┌────────────────────────────────────────────────────────────────────────┐
│  ┌──── L1 (Arabic) ────┐           ┌──── L2 (English) ────┐              │
│  F1 [NP PP]                         F1 [NP PP]                           │
│  F2 [NP3 NP2] constrained by F3     F2 [NP3 NP2] constrained by F3       │
│  F3 [Simultaneous participation     F3 [NRRs]                           │
│       in the act]                          {Give class, Tell class      │
│  F4 [EF]                                     and Throw class}            │
│                                                                          │
│           L1 (Arabic)      L1 & L2        L2 (English)                   │
│              F3              F1               F3                         │
│              F4              F2                                          │
└────────────────────────────────────────────────────────────────────────┘
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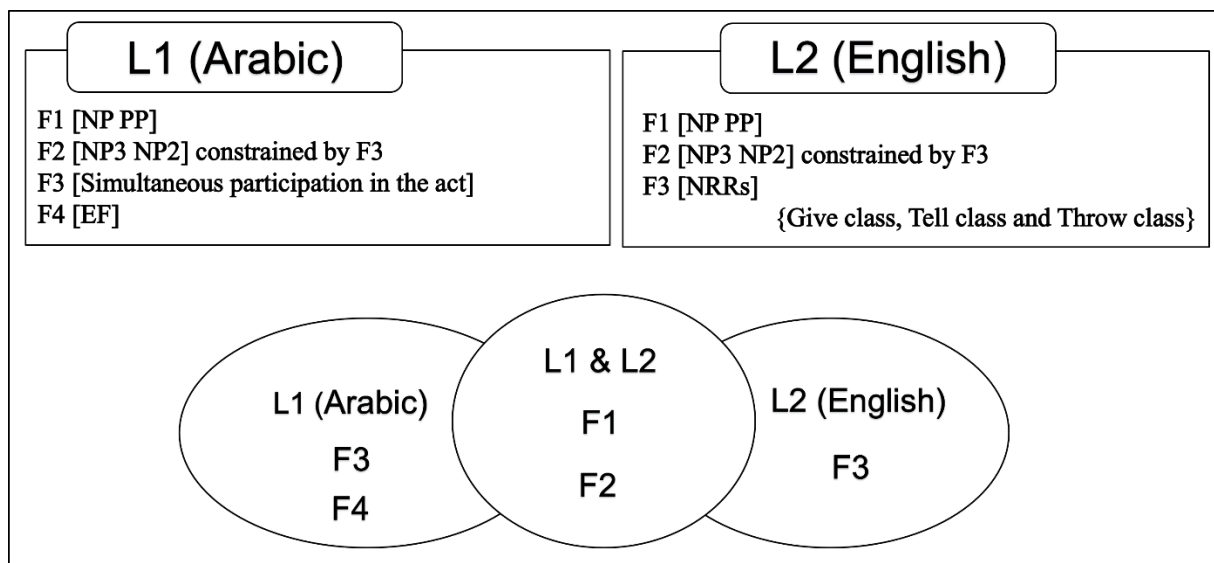
Figure 6. English acquisition by Arab learners (mapping features and feature assembly)

A question may be highlighted is that how Arab learners of English acquire the English dative alternation. In accordance with the superset and the subset of English and Arabic dative features as illustrated in Figure 6, Arab learners of English may need to substantially fulfil a learning task to acquire the English dative alternation. The task is twofold and corresponds to two distinct stages. The first stage is mapping L1 features to their equivalents in L2. An illustrative task for this stage is the mapping of the occurrence of the PD structure with all dative verbs as well as

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the allowance of the DOD structure with verbs such as 'give', 'sell', 'tell', and 'show'. The second stage is the reassembling of L2 features. This stage can be accomplished by abandoning L1 features that are not available in the L2 grammar. For example, they should stop assuming the validity of the notion of the simultaneous participation between the Agent and the Goal argument in the DOD structure. English learners of Arabic also have to realise the invalidity of SD structures. The abandonment of these two points will occur based on the availability of negative evidence. The reassembling occurs also through learning the NRRs to assist them to acquire the DOD structure with certain verbs that are not allowed in their L1 grammar such as 'pay', 'read', 'write', 'throw', 'kick', 'toss', and 'shoot'. The acquisition of the NRRs is provided by positive evidence.

4.2.3 The methodology
4.2.3.1 Participants

Two major groups contributed in this study: one was the experimental group that was made up of 50 Arabic speakers learning English as L2 and the second group was 10 native speakers of English who acted as controls to certify the reliability and validity of the used test.

The experimental samples in this study came from mixed male and female Saudi students. The vast majority, however, were undergraduate and postgraduate students who were majoring in a variety of programs in UK universities at the time of data collection. The rest were students in an intensive English program. They came to the UK for a short period of time exclusively to improve their English. They came from different parts of the Kingdom of Saudi Arabia. 25 of them were treated as pre-intermediate proficiency level of English participants and the rest treated as upper-intermediate proficiency level of English participants. All the participants in the control group were studying in a bachelor programmer in various areas at University of York.

The reasons for selecting L2 learners who are at the pre-intermediate and the upper-intermediate levels for the present study are as follows. Firstly, pre-intermediate learners, to some extent, have just been exposed to their L2. It also might be said that they do not have a good amount of the L2 input. Upper-intermediate learners, on the other hand, have been exposed to their L2 for a while and received quite a good amount of input. Investigating such levels may assist those who are interested in L2 acquisition and language teaching to recognise what is difficult to learn and what is easy. Recognising the difficulty and easiness in language acquisition could likely improve the way in which L2 is taught in classrooms and properly develop textbooks and other teaching materials.

4.2.3.2 Materials

4.2.3.2.1 Proficiency testing

Due to the necessity of classifying the non-native participants into proficiency levels, the Oxford Quick Placement Test (QPT) was distributed to the Arab participants to determine their proficiency matching. The test is comprised of two parts: part one includes 40 questions, while the second part has 20 questions. Participants are instructed to choose the appropriate answer. The test is intended as a test of grammar (e.g., cases, tenses, conjugation of verbs, gender) and vocabulary. The scores from the two parts of the test were added to produce a total score out of 60. According to the test designers of QPT, the way in which the score bands relate to levels of English proficiency is described in Table 11. The participants of this study were assigned into two levels: those who scored between 30 and 39 were treated as pre-intermediate learners and those who scored between 40 and 47 were treated as upper-intermediate learners.

Table 11. Shows the description of the scores of the English proficiency test	
ALTE level	**Paper-and-pen test score**
Beginner	1-17
Elementary	18-29
Pre-intermediate	30-39
Upper-intermediate	40-47
Advanced	48-54
Very advanced	55- 60

4.2.3.2.2 **The picture-judgment task**

What should be mentioned before describing the questionnaire is that a crucial point was put in the consideration while preparing the grammaticality judgment task is that both objects ought to be NP complements. This important point was considered by Mazurkewich (1985) when she excluded the pronouns from her study. She, however, mentioned (1985; 21) that:

> 'Since it appears that some people find sentences with double NP complements in which the indirect object is pronominalized to be sometime acceptable. However, the corresponding sentence in which the indirect object is a noun is usually considered to be ungrammatical.'

This vital observation was later considered by Hawkins (1987) who stated that both native speakers and L2 learners' judgments in the acquisition of the dative alternation can be different when the indirect object is a NP and when it is a pronoun.

The participants were given written grammaticality judgment tasks with pictures. This questionnaire involved two variations of items: the investigated items and the distractors item. Both items and their assortment of different structures were randomly ordered to avoid possible ordering influences.

The investigated items consisted of pictures and sentences containing alternating verb followed by a three-point Likert scale from 1 (bad example) through 2 (not sure) to 3 (good example). It

was comprised of 48 pictures; each four pictures describe a verb in four different constructions. The different constructions are shown in the tables below. These verbs were classified into three verb classes, and each class had four verbs. The classification was made in light of the NRRs. The first class contained act of giving verbs. The verbs chosen from this class are 'give', 'sell', 'pay' and 'hand'. 'Give' is taken as an example. See Table 12.

Table 12. Examples of the four different structures with 'give'	
Sentence type	**Example**
BPD	Peter gave the book to Kim
BDOD	Peter gave Kim the book.
SPD	Peter gave to Kim the book.
SDOD	Peter gave the book Kim.

The second class included type of communication verbs. In this class, 'tell', 'read', 'write' and 'show' were selected. 'Tell' is taken as an example, as observed in Table 13.

Table 13. Examples of the four different structures with 'tell'	
Sentence type	**Example**
BPD	Tom told the story to the child.
BDOD	Tom told the child the story.
SPD	Tom told to the child the story.
SDOD	Tom told the story the child.

The third class consisted of ballistic motion verbs. The chosen verbs from this class were 'throw', 'kick', 'toss' and 'shoot'. 'Throw' is taken as an example, as illustrated in Table 14.

Table 14. Examples of the four different structures with 'throw'	
Sentence type	**Example**

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BPD	Ellis threw the pen to Peter.
BDOD	Ellis threw Peter the pen.
SPD	Ellis threw to Peter the pen.
SDOD	Ellis threw the pen Peter.

The distractors were prepared according to the procedure applied by both Inagaki (2001, 2002) who investigated the acquisition of manner of motion verbs and by Thomas (2004) who examined the second language acquisition of prepositions. The distractors were showed in 48 pictures as well. Each picture described a 'figure' (the moving object) and the 'ground' (the final location of the object or its traversal of a boundary) (Talmy 1985). There was also an arrow in certain pictures to illustrate a directional context. The picture in each slide was followed by both a sentence containing a manner of motion verb with a PP that was ambiguous in some pictures and unambiguous in the remaining pictures and a three-point Likert scale from 1 (bad example) through 2 (not sure) to 3 (good example). An example of this is taken from slide 24, *the boat floated behind the reeds*. 'The boat' is the figure, and 'the reeds' are the ground. Figures and grounds were labelled to ensure that participants were acquainted with the labelled vocabulary. The distractors were classified into four groups. The classification was made in light of the prepositions and the context. The first category contained an unambiguous preposition 'into' and 'onto' and change of locational picture. In this class, three verbs were employed: 'run', 'jog' and 'crawl' which were expressed by four different structures. An example of this classification with its different structures is demonstrated in Table 15.

Table 15. Examples of an unambiguous preposition and change of locational picture	
Sentence type	**Example**
Manner V + PP (into)	Tom ran into the house.
Manner V + PP (in)	Tom ran in the house.
Directed V + PP + V-ing	Tom went into the house running.
Manner V and directed V + PP	Tom ran and went into the house.

The second class involved an unambiguous preposition and located motion picture. Three verbs: 'run', 'jog' and 'crawl' were selected to express located motion picture by adopting an unambiguous preposition such as 'in' and 'on'. An example of the second class can be observed in Table 16.

Table 16. Examples of an unambiguous preposition and located motion picture	
Sentence type	**Example**
Manner V + PP (onto)	Emma jogged onto the bridge
Manner V + PP (on)	Emma jogged on the bridge.
Directed V + PP + V-ing	Emma went onto the bridge jogging.
Manner V and directed V + PP	Emma jogged and went onto the bridge.

The penultimate class was an ambiguous preposition and change of locational picture. This class included three verbs: 'swim', 'fly' and 'float' which occurred in certain disparate constructions by using an ambiguous preposition either 'under', 'over' or 'behind'. An illustration of this class is shown in Table 17.

Table 17. Examples of an ambiguous preposition and change of locational picture	
Sentence type	**Example**
Manner V + PP	Paul swam under the bridge.
Directed V + PP + V-ing	Paul went under the bridge swimming.
Manner V and directed V + PP	Paul swam and went under the bridge.
Was + PP + Manner V-ing	Paul was under the bridge swimming.

Finally, there was an ambiguous preposition and located motion picture class. This classification was expressed by three verbs: 'swim', 'fly' and 'float' in a variety of constructions including an ambiguous preposition 'under', 'over' or 'behind'. An instance of this class is illustrated in Table 18.

Table 18. Examples of an ambiguous preposition and located motion picture	
Sentence type	**Example**
Manner V + PP	The plane flew over the house.
Was + PP + Manner V -ing	The plane was over the house flying.
Manner V and directed V + PP	The plane flew and went over the house.
Directed V + PP + V-ing	The plane went over the house flying.

These two different items were ordered in a zebra style to avoid potential ordering influences. A copy of this questionnaire is provided in Appendix B.

4.3 The L2 Arabic study

4.3.1 Introduction

The main aim of this section is to summarise the empirical study that carried out the investigation of the acquisition of the Arabic dative alternation by native speakers of English. It outlines the motivation of the current study and its methodology that applied to examine the research questions. It is organised into two sections: 4.3.2 sheds a light on the motivation of the current study. 4.3.3 presents the methodology. This section is subdivided into the participants and the materials that contained the proficiency test and the experimental questionnaire.

4.3.2 The motivation of the current study

The current study endeavours to conduct an empirical investigation of English speakers' knowledge of Arabic semantic constraints that, to some extent, govern the dative alternation. The objective of the present study is to determine whether these speakers can realise the importance of the semantic constraints in constructing verb classes into a variety of syntactic constructions. Firstly, to what extent does the acquisition of the semantic constraints assist L2

learners to map the three verb classes under investigation onto various argument structures. Particularly, how well can these learners unlearn argument structures that are not permissible in their L2 grammar? Secondly, are these learners capable of noticing the L2 properties that are not allowable in their L1? Finally, which dative structure is early acquired by Arabic L2 learners? To fulfil the purpose of addressing these questions, the study concentrates upon the acquisition of the Arabic dative alternation by native speakers of English since the disparities between Arabic and English in the domain of the dative alternation provide an interesting case for exploring these questions.

L1 (English)
All verbs in the Give class, Tell class and Throw class are allowed to occur in the DOD construction.

L2 (Arabic)
Some verbs in the Give class and Tell class are allowed to occur in the DOD construction.
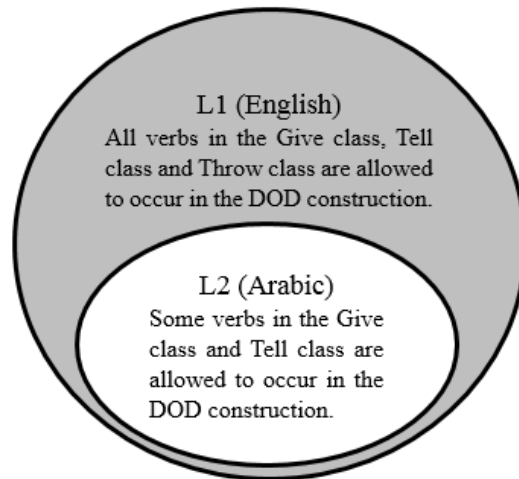
Figure 7. Superset L1 (English) - subset L2 (Arabic)

A first explored issue in this study is how L2 acquisition of argument structure differs depending on the learner's mother tongue: especially, how well L2 learners are aware of the semantic constraints in Arabic and can express a predicate with three arguments such as *rama* 'throw' in different grammatical syntactic structures. With the intention of addressing this question, the study deals with the acquisition of the dative alternation in Arabic with the equivalent of three verb classes in English: act of giving verbs, type of communication verbs and ballistic motion verbs by English-speaking learners. English is considered a superset of Arabic in terms of the allowance of the dative alternation. On one hand, all verbs in the Give, Tell and Throw classes are permissible to appear in the DOD form. On the other hand, Arabic only allows the equivalent

of some verbs in the Give class such as *a'ta* 'give' and the Tell class such as *akbara* 'tell', as shown in Figure 7.

A hypothesis tested regarding this issue is that because of the appearance of the Throw class verbs and certain verbs in the Give class such as 'pay' and the Tell class such as 'read' in the DOD construction in English, English learners of Arabic will struggle to understand that such verbs violate the L2 semantic constraints, and are consequently not allowed to appear in the DOD pattern.
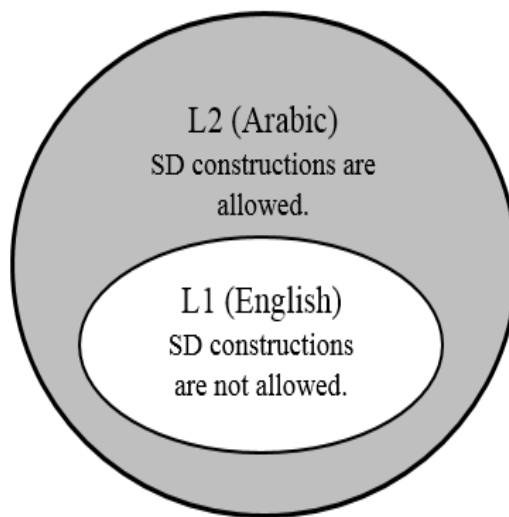
Figure 8. Superset L2 (Arabic) - subset L1 (English)

The second question investigated in this study is that how well L2 leaners are capable enough to realise the extent of L2 argument structures compared to their L1. To do so, this study will investigate the acquisition of the SD structures in Arabic by native speakers of English since all the SD structures are permitted in Arabic but not in English, as shown in Figure 8.

An assumption examined in this study is that even though all SD structures are not allowed in the L1, English learners of Arabic will nevertheless acquire such constructions to a great extent. This hypothesis is built on the presumption that positive evidence is available to these learners.

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The third question investigated in this study was the early acquisition of the Arabic dative structures by native speakers of English. It is hypothesised that the experimental participants will accept the PD structure earlier than the DOD structure.
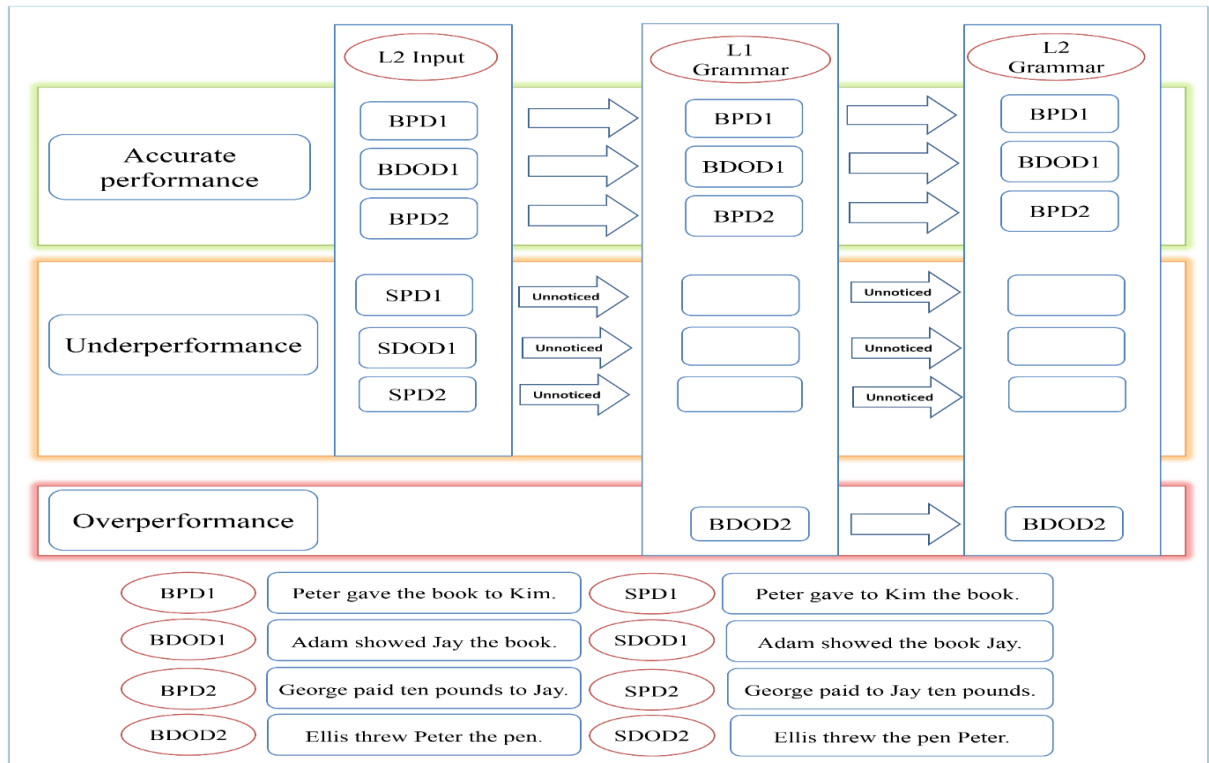
Figure 9. An illustration of the dilemma of the acquisition of the Arabic dative alternation by English speakers.

The hypothesised acquisition of the Arabic dative alternation by English-speaking learners' dilemma is illustrated in Figure 9. The leftmost box shows what is available in the L2 input, the middle box presents the L1 grammar (English) and the rightmost box the resultant L2 grammar. As in the leftmost box, there are not only all the PD constructions basic and scrambling with the two verb classifications, but also the DOD constructions basic and scrambling with first verb group. Inagaki (2002) assumed that what is available in the L2 input will be filtered through the middle box which shows both basic structures of the PD and the DOD with the two verb

classifications. Therefore, the L2 learners possibly will realise the overlap between their L1 and L2 which might lead to potential problems.

Based on the partial fit between the L1 and the L2, English learners of Arabic will deal with two structure circumstances: firstly, L1 (English) has a wider range of structures that are not permissible in L2 (Arabic), as shown in Figure 6. Secondly, L2 (Arabic) allows a variety of dative structures that are ungrammatical in L1 (English), as shown in Figure 7. These two circumstances will be further discussed from the view of the acquisition of the Arabic dative alternation by English native speakers, since these two languages have overlapping sentence types.

Firstly, the consider case where certain L1 argument structures are a superset of the corresponding L2 properties, as illustrated in Figure 6. This circumstance causes problem in L2 acquisition because, assuming L1 transfer is triggered by the partial overlap between the L1 and the L2, all positive input that L2 learners may receive is consistent with the L1 grammar as well as the L2 grammar (White 1991). An instance of this case is the unlearning of the DOD structure with certain verbs in Arabic by native speakers of English. Unlike Arabic, English has a wider range of verbs to occur in the DOD construction as Figure 6 shows. L1 structures correspond to a superset of those in the L2 by allowing the BDOD2 structure. Such a circumstance predicts difficulty for English speakers to unlearn the BDOD2 in Arabic. This difficulty is anticipated based on the assumptions of the FDH, RDH and White's (1991) Model. The FT/FA assumes that these learners will initially transfer their L1grammar by accepting the BDOD2 structure in Arabic and they will restructure themselves and reject such structure once they cannot analyse the L2 input based on the L1 grammar.

The second situation L2 learners will deal with is that where L2 argument structures form a superset of L1 argument structures, as in Figure 7. In such a situation, the partial fit between the L1 and L2 may mislead L2 learners to adopt one of the two possibilities: assuming that the L1 and L2 are identical, thus failing to incorporate L2 properties that do not occur in the L1

(Adjémian 1983). Or noticing that a large number of various structures are grammatical in the L2 although such structures are not allowed in the L1, consequently, L2 learners may be able to acquire such structures and arrive at the L2 grammar on the basis of positive evidence. A clear example that illustrates this case is the acquisition of Arabic SD structures by English-speaking learners. Arabic allows the SD structures whereas English does not. Arabic structures constitute a superset of English structures. According to the FDH and the RDH, English learners will not acquire the SD constructions in Arabic due to their absence in L1 grammar. The FT/FA approach, however, assumes that these learners will initially transfer their L1 grammar by ignoring the L2 grammatical structures as they could not be found in the L1 grammar. Later, they will restructure themselves and acquire L2 structures once they cannot analyse the input based on the L1 grammar. White (1991) assumed that these learners may notice the use of some L2 structures that are not allowed in their L1 and arrive at L2 grammar once the right evidence is provided. Otherwise, they will be conservative and ignore L2 grammatical structures again due to their absence in the L1 grammar.

It is crucial to differentiate the two cases discussed above. On one hand, the prediction regarding the first case where English permits a superset of argument structures that Arabic does not allow is that this situation causes difficulty in L2 acquisition since all positive data L2 learners receive are consistent with the L1 grammar as well as the L2 grammar. In other words, English-speaking learners of Arabic will struggle to comprehend that the BDOD2 structure is unacceptable in Arabic.

On the other hand, the prediction for the situation where Arabic argument structures are a superset of English argument structures, is not as obvious as the first situations, with two possibilities. First, the partial fit between English and Arabic possibly will mislead L2 learners to assume that English and Arabic are the same; hence they will fail to acquire Arabic structures that are not acceptable in English. This expectation is built on the basis of Adjémian's argument (1983), the FDH and the RDH. Second, owing to the fact that certain Arabic properties do not exist in English, English-speaking learners may perhaps be able to realise these structures and

acquire Arabic grammar on the basis of positive evidence. Depending on these possibilities, it can be expected that those participants who have a low proficiency level (the pre-intermediate) may, to some extent, struggle to acquire such structures as they are not exposed enough to the required positive evidence to arrive at the L2 grammar. However, those participants who are majoring in a high proficiency level (the upper-intermediate) may acquire the SD structures since these learners have been exposed to the right positive evidence for some time.

The third examination which is about the early acquisition of the dative structure. The previous investigations such as Mazurkewich (1981, 1984, 1985) revealed that the PD construction is acquired before the DOD construction. Therefore, the prediction regarding this question is that the PD structure may be acquired earlier than the DOD structure.
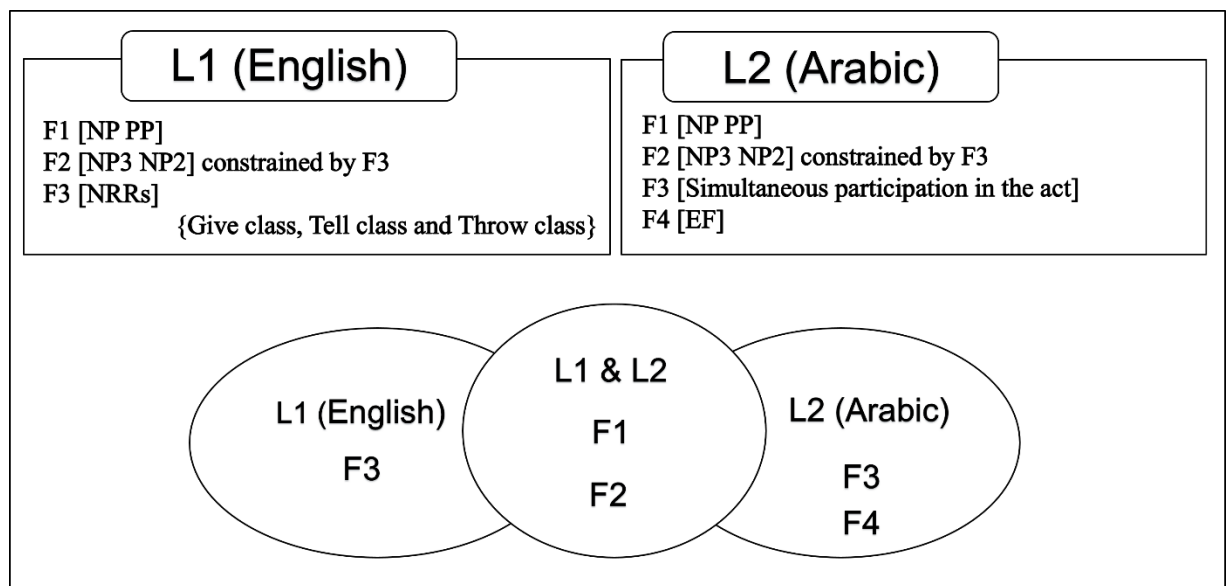
Figure 10. Arabic acquisition by English learners (mapping features and feature assembly)

It is worth highlighting how English learners of Arabic acquire the Arabic dative alternation. According to the superset and the subset of English and Arabic dative features as illustrated in Figure 10, English learners of Arabic have a twofold task to be achieved to acquire their L2 grammar. First, they have to map their L1 grammar to the equivalents in the L2 grammar.

Namely, they should map the PD structure with all dative verbs and the DOD structure with some verbs like 'give', 'tell' and 'show' as they are available in both languages. Second, they need to reassemble features that are not available in their L1 based on the positive evidence such as the EF that allows the low object move to a higher position. Learning such a syntactic feature based on the positive evidence may facilitate them to acquire the SD structures. Moreover, they should learn the notion of the simultaneous participation between the Agent and the Goal in the DOD structure as well as abandon the NRRs which govern the English dative alternation resulting in rejecting of the DOD structure with several verbs such as 'pay', 'read', 'write', 'throw', 'kick', 'toss', and 'shoot' as they are not grammatical in Arabic. Overall, they should receive positive evidence to realise the superset of their L2 and negative evidence to realise the ungrammaticality of some L2 structures.

4.3.3 The methodology
4.3.3.1 Participants

This study compared two language groups, the Arabic group who acted as controls and two separate groups of English learners acquiring Arabic for academic studies who acted as experimental participants. The control group was composed of 10 native speakers of Arabic and in the experimental groups; a total of 40 English-speaking leaners of Arabic was involved.

The education in Saudi Arabia is segregated according to gender. The visited universities are no exception. Consequently, the experimental samples in this study were made of male English learners of Arabic who came from various English-speaking countries: 23 were from United Kingdom, nine were from United States of America, three were from Canada, three were from Australia and two were from South Africa. All these participants were majoring in a variety of Arabic institutions in Saudi universities: 21 were from Imam Muhammad ibn Saud Islamic University, 17 were from Islamic University of Madinah and two were from Umm Al-Qura University. These participants also came for the purpose of studying Arabic Studies and Islamic Law. The experimental participants were classified depending on their Arabic level into two

groups: 20 were considered as upper-intermediate learners and 20 were considered as pre-intermediate learners. The control group included 10 native speakers of Arabic most of whom were teachers and the rest were under graduate students in various departments at King Abdul-Aziz University.

The objectives of investigating how English learners of Arabic who are at the pre-intermediate and the upper-intermediate levels acquire Arabic grammar for the present study are mentioned early with objective of these two levels in the L2 English study.

4.3.3.2 Materials
4.3.3.2.1 <u>Proficiency testing</u>

To classify the English participants into the proficiency levels, it was essential to administer a test to ensure their proficiency matching. Consequently, an Arabic Test was distributed to all of the non-native participants to determine their Arabic proficiency levels. The test is comprised of 40 questions. Participants are instructed to choose the appropriate answer. The test is intended as a test of grammar (e.g., cases, tenses, conjugation of verbs, gender) and vocabulary. The full mark of this test was 40. Those who scored between 20 and 26 were considered to be at the pre-intermediate level and those who scored between 27 and 32 were considered to be at the upper-intermediate level. See Table 19 for the scores and the corresponding ALTE levels.

Table 19. Shows the description of the scores of the Arabic proficiency test	
ALTE level	**Paper-and-pen test score**
Beginner	1-11
Elementary	12-19
Pre-intermediate	20-26
Upper-intermediate	27–32
Advanced	33–36
Very advanced	37-40

4.3.3.2.2 The picture-judgment task

The data for this study were only gathered by a questionnaire. It involved two kinds of items: target items and distractor items. Three different verb classes, act of giving verbs, type of communication verbs and ballistic motion verbs with the PD and the DOD constructions were presented as target items. Both the direct object and the indirect object were NP arguments to avoid the differences between the native speakers and the experimental participants' ratings. Regarding this point, this questionnaire followed Hawkins (1987) who stated that both native speakers and L2 learners' judgments in the acquisition of the dative alternation can be different when the indirect object is a NP and when it is a pronoun.

The distractor items were composed of six motion verbs such as *sabaha* 'swim' sometime with two prepositions such as *fi* 'in' or with adverbs of place such as *faooq* 'over'. To control for possible ordering effects, the test items and distractors were randomly ordered. The pictures within each item were also randomly ordered for the same purpose. These items will be described in detail below.

Firstly, the target items were composed of 12 verbs expressed in four various structures. A total of 48 sentences were investigated in this study. Each four sentences presented an investigated verb. The sentences were presented with picture and followed by a three-point Likert scale from 1 (bad example) through 2 (not sure) to 3 (good example). The ninth slide in the questionnaire is taken as an example, as shown in (133):

(133)   رمى فايزٌ القلمَ فوازًا

*rama	fayez-un	alqalam-a	fawaz-an
threw	Fayez-Nom	the pen-Acc	Fawaz-Acc

'Fayez threw Fawaz the pen.'

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The questionnaire can be divided in light of the NRRs into three classes. The first class is the act of giving verbs which has four verbs: *a'ta* 'give ', *ba'a* 'sell', *dafa'a* 'pay' and *nawala* 'hand'. *a'ta* 'give' is taken as an instance, as table 20 shows.

Table 20. Examples of the four different structures with *a'ta* 'give'		
The abbreviation of each structure	**language**	**Example**
BPD	Arabic	أعطى مجدي الكتابَ لأنورَ.
	English	Majdi gave the book to Anwar.
BDOD	Arabic	أعطى مجدي أنورَ الكتابَ.
	English	Majdi gave Anwar the book.
SPD	Arabic	أعطى مجدي لأنورَ الكتابَ.
	English	Majdi gave to Anwar the book.
SDOD	Arabic	أعطى مجدي الكتابَ أنورَ.
	English	Majdi gave the book Anwar.

The second class is type of communication which involves also four verbs: *akbara* 'tell', *qara* 'read', *kataba* 'write' and *araa* 'show'. *akbara* 'tell' is showed as an example as in Table 21.

Table 21. Examples of the four different structures with *akbara* 'tell'		
The abbreviation of each structure	**language**	**Example**
BPD	Arabic	أخبرَ محمدٌ القصةَ لعلي.
	English	Mohammed told the story to Ali
BDOD	Arabic	أخبرَ محمدٌ عليًا القصةَ.
	English	Mohammed told Ali the story
SPD	Arabic	أخبرَ محمدٌ لعلي القصةَ.
	English	Mohammed told to Ali the story
SDOD	Arabic	أخبرَ محمدٌ القصةَ عليًا .
	English	Mohammed told the story Ali

The third class is ballistic motion which includes four verbs: *rama* 'throw', *rakala* 'kick', *qażafa* 'toss' and *saddada* 'shoot'. *rama* 'throw' is taken as an example, as illustrated in Table 22.

Table 22. Examples of the four different structures with *rama* 'throw'		
The abbreviation of each structure	**language**	**Example**
BPD	Arabic	رمى فايزٌ القلمَ إلى فوازٍ.
	English	Fayez threw the pen to Fawaz.
BDOD	Arabic	رمى فايزٌ فوازًا القلمَ.
	English	Fayez threw Fawaz the pen.
SPD	Arabic	رمى فايزٌ إلى فوازٍ القلمَ.
	English	Fayez threw to Fawaz the pen.
SDOD	Arabic	رمى فايزٌ القلمَ فوازًا.
	English	Fayez threw the pen Fawaz.

The distractor items were designed based on the equivalent of the procedure applied by both Inagaki (2001, 2002) who investigated the acquisition of manner of motion verbs and by Thomas (2004) who examined the second language acquisition of prepositions. The distractor items were composed of 48 pictures as well. Each picture contained a sentence which described a 'figure' and the 'ground'. There was also an arrow in certain pictures to illustrate a directional context. The sentence in each slide contained a manner of motion verb with a PP or adverb and a three-point Likert scale from 1 (bad example) through 2 (not sure) to 3 (good example). An instance of this is taken from slide 24, as illustrated in example (134):

(134) قفزَ الحصانُ فوقَ الحاجزِ

qafaza	alhisan-u	faooq-a	alhajiz-i
jumped	the horse-Nom	over-Acc	the barrier-Gen

'The horse jumped over the barrier.'

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'The horse' is the figure, and 'the barrier' is the ground. Both figure and ground were labelled to make certain that participants were familiar with the lexical items. The distractor items were classified into four classifications. The classification was made in light of the prepositions or the adverbs and the context. The first classification included prepositions *fi* 'in' and *ela* 'to' to describe change of locational pictures. The second class comprised prepositions *ala* 'on' and *ela* 'to' to express locational pictures. In these classes, three verbs were employed: *jara* 'run', *haroala* 'jog' and *haba* 'crawl' which were expressed in four different structures. Firstly, the chosen verbs were used as a verb. In the rest of structures, they were used as adverbs in different styles. Examples of these classifications with their different structures are given in Tables 22 and 23 respectively.

Table 23. Examples of a preposition and change of locational picture		
The abbreviation of each structure	**language**	**Example**
Manner V + PP	Arabic	حبا الولدُ في الحديقةِ.
	English	The baby crawled in the garden.
Directed V + PP + adverb	Arabic	ذهبَ الولدُ إلى الحديقةِ حبوًا.
	English	The baby went to the garden crawling.
Directed V + PP + adverb of verbless sentence	Arabic	ذهبَ الولدُ إلى الحديقةِ وهو يحبو.
	English	The baby went to the garden by crawling.
Directed V + PP + adverb of verb sentence	Arabic	ذهبَ الولدُ إلى الحديقةِ يحبو.
	English	The baby went to the garden by crawling.

Table 24. Examples of an adverb and located motion picture		
The abbreviation of each structure	**language**	**Example**
Manner V + PP	Arabic	هرولَ محمدُ على الجسرِ
	English	Mohammed jogged on the bridge.
Directed V + PP + adverb	Arabic	ذهبَ محمدُ إلى الجسرِ هرولةً.
	English	Mohammed went to the bridge jogging.
Directed V + PP + adverb of verbless sentence	Arabic	ذهبَ محمدُ إلى الجسرِ وهو يهرولُ.
	English	Mohammed went to the bridge by jogging.
Directed V + PP + adverb of verb sentence	Arabic	ذهبَ محمدُ إلى الجسرِ يهرولُ.
	English	Mohammed went to the bridge by jogging.

The third and fourth classifications adopted three motion verbs to express certain events, some of which were change of locational pictures and the remaining were locational motion pictures. These three motion verbs expressed as a verb with an adverb of place in the first structure. In the final three structures, they employed as an adverb in three different ways with a directed verb. These three motion verbs were *sabah* 'swim', *qafaza* 'jump' and *tafa* 'float'. Examples of these two classes are shown in Tables 25 and 26 respectively.

Table 25. Examples of an adverb of place and change of change of locational picture		
The abbreviation of each structure	**language**	**Example**
Manner V + adverb of place	Arabic	**طفا القاربُ خلفَ القصبِ**
	English	The boat floated behind the reeds.
Directed V + PP + adverb	Arabic	**ذهبَ القاربُ إلى القصبِ طفوًا.**
	English	The boat went to the reeds floating.
Directed V + PP + adverb of verbless sentence	Arabic	**ذهبَ القاربُ إلى القصبِ وهو يطفو.**
	English	The boat went to the reeds by floating.
Directed V + PP + adverb of verb sentence	Arabic	**ذهبَ القاربُ إلى القصبِ يطفو.**
	English	The boat went to the reeds by floating.

Table 26. Examples of an adverb and change of locational picture		
The abbreviation of each structure	**language**	**Example**
Manner V + adverb of place	Arabic	**سبحَ خالدٌ تحتَ الجسرِ.**
	English	Khalid swam under the bridge
Directed V + PP + adverb	Arabic	**ذهبَ خالدٌ إلى تحت الجسرِ سباحةً.**
	English	Khalid went under the bridge swimming.
Directed V + PP + adverb of verbless sentence	Arabic	**ذهبَ خالدٌ إلى تحت الجسرِ وهو يسبحُ.**
	English	Khalid went under the bridge by swimming.
Directed V + PP + adverb of verb sentence	Arabic	**ذهبَ خالدٌ إلى تحت الجسرِ يسبحُ.**
	English	Khalid went under the bridge by swimming.

4.4 Procedure

To conduct the current bidirectional study, several steps were followed. Firstly, the questionnaire was created. Before piloting the questionnaire, it was necessary to apply for ethical approval. After piloting the questionnaire during summer term 2013, it was adjusted and modified by the beginning of January 2014. Finally, data collection was started by the middle of January 2014. These steps will be further explained in this section.

In order to conduct an experimental study, certain permissions have to be obtained. First, I applied for the ethical approval from University of York's Ethics Committee which was obtained in May 2013. I also contacted several departments of teaching Arabic as a foreign language at Saudi universities such as The Islamic University in Al-Madinah Al-Munawarah to conduct the L2 Arabic study in their departments.

Having completed the design of the research instrument, it was useful to conduct a piloting process of research instruments. This statement was supported by Blessing & Chakrabarti (2009) who proposed that the objective of a pilot study is to assist the researcher to identify possible complications and problems which might affect the quality and validity of the findings. They wrote that:

> 'The need to do a pilot study before undertaking an empirical study cannot be overemphasised and actually trying out the research as planned and requesting feedback from the participants involved in the pilot study can often reveal that several changes are required if the study is to be effective and efficient' (Blessing & Chakrabarti 2009:114).

As a result of the obvious usefulness of piloting the research questionnaire, the L2 English study's questionnaire was piloted in summer 2013 to recognise the potential problems that might affect the results. The L2 English study's questionnaire was piloted as participants for this study

can be recruited easier than the L2 Arabic study. This questionnaire was given to five native speakers of English as a control group and 20 Arab learners of English as an experimental group. This pilot study was not only submitted as a Confirmation Paper for my PhD study but also a summary was presented and published at the University of Essex 2014 Proceedings.

However, it was clear that the questionnaire should have distractor items, so a new version of the questionnaire was created for the main study.

With the new version of the questionnaire, the data collection for the L2 English study was conducted during January and February 2014. The L2 English questionnaire was distributed to 60 participants, ten of them were English native speakers and 50 were Arab learners of English. Nevertheless, collecting the L2 Arabic study data was started by the beginning of March and finished in the middle of May 2014. It was given to ten native speakers of Arabic and 40 English learners of Arabic. The communication with the control groups in both studies was in their mother tongue. The communication with the experimental groups was either in their mother tongue or the target language as the participant preferred so as to help them to participate in a more comfortable manner. The data collection always started with the control groups since they did not have to complete the proficiency test, which took more time. It should be mentioned that the data collection happened over a period of nearly five months.

The participants were asked to sign a consent sheet as to make sure that they agreed to participate in this study. After obtaining written informed consent from the participants, they were not only informed of their right to withdraw at any time but also that the participation would not take more than 90 minutes. It was decided that there would be no time limit for the tasks; however, participants were informed that going back and changing decisions was not recommended. They were also notified that the aim of the proficiency test was to enable the researcher to classify them into the pre-intermediate or the upper-intermediate levels.

Since native speaker participants in each study did not have to complete the proficiency test they spent roughly half an hour. However, on average, the experimental participants took nearly seventy minutes on both the proficiency test and the picture judgment task.

They were notified that the researcher is interested in investigating how L2 learners acquire the dative alternation. It was emphasised that informants should not consider the picture judgment task as a test. In addition, they were informed that all pictures showed situation in the past. Consequently, the sentences were in the past tense.

4.5 Data analysis

Having marked the proficiency test, the experimental participants were classified into two groups: pre-intermediate level and upper-intermediate level.

The picture judgment task was divided into three groups of participants: native speakers, upper-intermediate learners and pre-intermediate learners. Then, the data were analysed through two stages. In the first stage, the data were entered into SPSS (version 21.0) to attain the means. The data were organised in the following way to attain the means. The verbs used in the study were classified into two classes. The first class composes of five alternating verbs ('give', 'sell', 'hand', 'tell' and 'show'). The second class includes seven alternating verbs ('pay', 'read', 'write', 'throw', 'kick', 'toss' and 'shoot'). These two classes should be in one category since they all are alternating verbs in English, however, they were classified into two classes due to the fact that the first class can occur in the DOD form in Arabic but the second class cannot. This classification was made in order to assist the researcher to investigate the extent to which the participants can recognise the grammaticality of structures that do not exist in their L1. Such classification also assists the researcher to examine to what extent these learners are able to unlearn structures that do not occur in the L2 despite their occurrence in the L1. These two classes come with four different structures: BPD structure, BDOD structure, SPD structure and

SDOD structure. As a result of this classification, the study has eight categorises. The first category is taken as an example to explain how the means was obtained. Each participant's responses were summed and divided by five since this group contains five verbs. After that participants' means were summed and divided by their total number to obtain the mean values.

In the second stage, the statistical analysis was built on value means of each structure. The comparison between the participants groups was based on three-way ANOVA repeated measures followed by the t-test to determine whether the means of the participant groups were statistically different from one another. Finally, the charts and tables were prepared in an Excel file to provide the reader with a wide view for the participants' responses.

Chapter 5 Results and discussion of the L2 English study

5.1 Introduction

The main purpose of this chapter is to present the results of the English study and discuss them in the light of certain SLA hypotheses and researches. This chapter is divided into two sections: 5.2 presents the results of the L2 English study by reporting the results of the acquisition of the basic structures followed by the report of the results of the unlearning of the scrambling structures. 5.3 discusses the results of the acquisition of the English dative alternation from the view of basic and scrambling structures. Finally, a summary of the results and the discussion is provided.

5.2 Results

5.2.1 Introduction

The means of participants' responses for constructions of dative sentences were entered into SPSS (21.0) to generate inferential statistics. Three-way ANOVA repeated measures was used to determine that there is a difference between groups. T-test was later utilised to determine what the differences are. Comparisons between the native speakers and the L2 learners groups were made by using a nonparametric test since the numbers of the participants in each group are different. The independent-samples t-test was adopted to compare between L2 learners groups owing to equality between the numbers of participants in both groups. The comparison between dative structures was built on paired-samples t-test. The abbreviations used for the description of each structure are represented in Table 27.

Table 27. Shows the abbreviations of each structure	
Abbreviation	**Structure**
BPD1	Basic Prepositional Dative structure with alternating verbs in Arabic ('give', 'sell', 'hand', 'tell' and 'show').

BPD2	Basic Prepositional Dative structure with non-alternating verbs in Arabic ('pay', 'read', 'write', 'throw', 'kick', 'toss' and 'shoot').
BDOD1	Basic Double Object Dative structure with alternating verbs in Arabic ('give', 'sell', 'hand', 'tell' and 'show').
BDOD2	Basic Double Object Dative structure with non-alternating verbs in Arabic ('pay', 'read', 'write', 'throw', 'kick', 'toss' and 'shoot').
SPD1	Scrambling Prepositional Dative structure with alternating verbs in Arabic ('give', 'sell', 'hand', 'tell' and 'show').
SPD2	Scrambling Prepositional Dative structure with non-alternating verbs in Arabic ('pay', 'read', 'write', 'throw', 'kick', 'toss' and 'shoot').
SDOD1	Scrambling Double Object Dative structure with alternating verbs in Arabic ('give', 'sell', 'hand', 'tell' and 'show').
SDOD2	Scrambling Double Object Dative structure with non-alternating verbs in Arabic ('pay', 'read', 'write', 'throw', 'kick', 'toss' and 'shoot').

5.2.2 Results of the L2 English study

5.2.2.1 The acquisition of English basic constructions

Figure 11. The mean responses on the acquisition of English basic constructions

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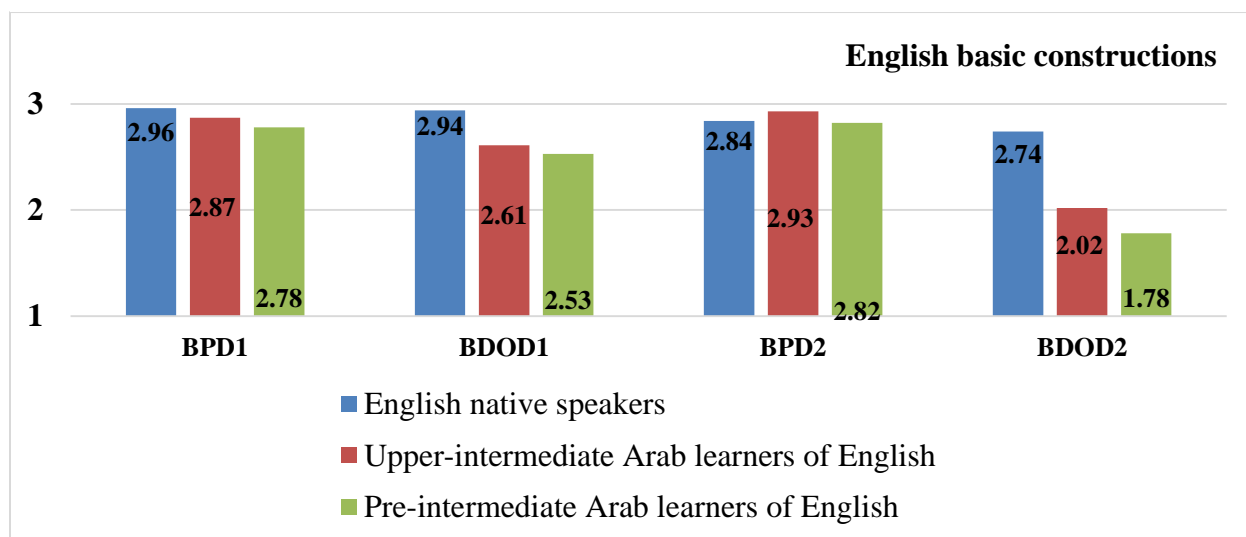
Table 28. Examples of English basic constructions	
The abbreviation of each structure	**Example**
BPD1	Peter gave the book to Kim.
BDOD1	Peter gave Kim the book.
BPD2	Ellis threw the pen to Peter.
BDOD2	Ellis threw Peter the pen.

Table 29. Tests of within-subjects effects on English basic structures				
Source	DF	MS	F	Sig.
Structures	1	10.155	36.611	.000
Structures * group	2	1.431	5.159	.009
Verb group	1	3.984	47.550	.000
Verb group * group	2	.151	1.797	.175
Structures * verb group	1	3.809	53.622	.000
Structures * verb group * group	2	.522	7.352	.001

A three-way mixed ANOVA was run within participant groups (native speakers of English, upper-intermediate learners and pre-intermediate learners of English), as a between-subject variable, and structures (BPD vs. BDOD) and verb groups (group one {give, sell, hand, tell and show} vs. group two {pay, read, write, throw, kick, toss and shoot}) as within-subject variables. The statistical analysis showed a significant main effect of structure and verb group, and significant two-way interactions between structure and group, and between structure and verb group, as shown in Table 29. Moreover, the three-way interaction between structures, verb group and group was significant, $F (7.352) = .522$, $p = .001$. However, the interaction of verb group and group showed no significant main effect for the acquisition of the basic structures $F (1.797) = .151$, $p = .175$. As the three-way interaction was significant results, it could be worth following this analysis up with a two-way ANOVA to find out the drives effects.

Table 30. Tests of within-subjects effects on the English BPD1 and BDOD1 structures				
Source	DF	MS	F	Sig.
Structures	1	.763	6.699	.012
Structures * group	2	.112	.987	.379

Two two-way mixed ANOVA, were run with group (native speakers of English, upper-intermediate learners and pre-intermediate learners of English) as a between-subject variable, and structure (BPD1 vs. BDOD1) as a within-subject variable. Table 30 provides an overview of the analysis of the BPD1 and the BDOD1 structure. The ANOVA pertaining to verb group 1 revealed that there is a significant effect of structure, $F (6.699) = .763$, $p = .012$. However, the interaction between the structures and group was not significant, $F (.987) = .112$, $p = .379$.

Table 31. Tests of within-subjects effects on the English BPD2 and BDOD2 structures				
Source	DF	MS	F	Sig.
Structures	1	13.201	56.283	.000
Structures * group	2	1.841	7.848	.001

A two-way ANOVA was run with groups (native speakers of English, upper-intermediate learners and pre-intermediate learners of English) as a between-subject variable, and structure (BPD2 vs. BDOD2) as a within-subject variable. It showed considerable results on both the structures $F (56.283) = 13.201$, $p = .000$ and the interaction of structures and group $F (7.848) = 7.848$, $p = .001$, as illustrated in Table 31. This table will be followed by one-way ANOVA to identify the source of interaction.

Table 32. One-way ANOVA on the English BPD2 and BDOD2 structures				
Source	DF	MS	F	Sig.
BPD2	2	.079	.826	.443
BDOD2	2	3.492	12.154	.000

Table 32 provides a statistical analysis of the BPD2 and the BDOD2 structures on one-way ANOVA. It was run within participant groups (native speakers of English, upper-intermediate learners and pre-intermediate learners of English) as a between-subject variable, and structure (BPD2 vs. BDOD2). As shown in Table 32, there is no evidence of the disparity between the participants on the assessment of the BPD2 structure. However, there was a statistical disparity between the participants on the assessment of the BDOD2 structure. These ANOVA analyses are followed by certain t-test analyses to further perceive the significance in assessment of the BDOD2 structure. It is interesting to find that there was a noticeable difference between native speakers (2.74) and the experimental participants (2.02 vs. 1.78) in terms of the assessment of the BDOD2 construction, which led by the low acceptance of this structure by the non-native participants, as illustrated in Table 33 and 34 respectively.

Table 33. Comparison between English native speakers and upper-intermediate Arab learners of English assessing the BDOD2 structure in English				
Groups of participants	N	Structure	Means	Sig
English native speakers	10	BDOD2	2.74	.001
Upper-intermediate Arab learners of English	25		2.02	

Table 34. Comparison between English native speakers and pre-intermediate Arab learners of English assessing the BDOD2 structure in English				
Groups of participants	N	Structure	Means	Sig
The English native speakers	10	BDOD2	2.74	.000
Pre-intermediate Arab learners of English	25		1.78	

5.2.2.2 The unlearning of English scrambling constructions

Figure 12. The mean responses on the unlearning of English scrambling constructions
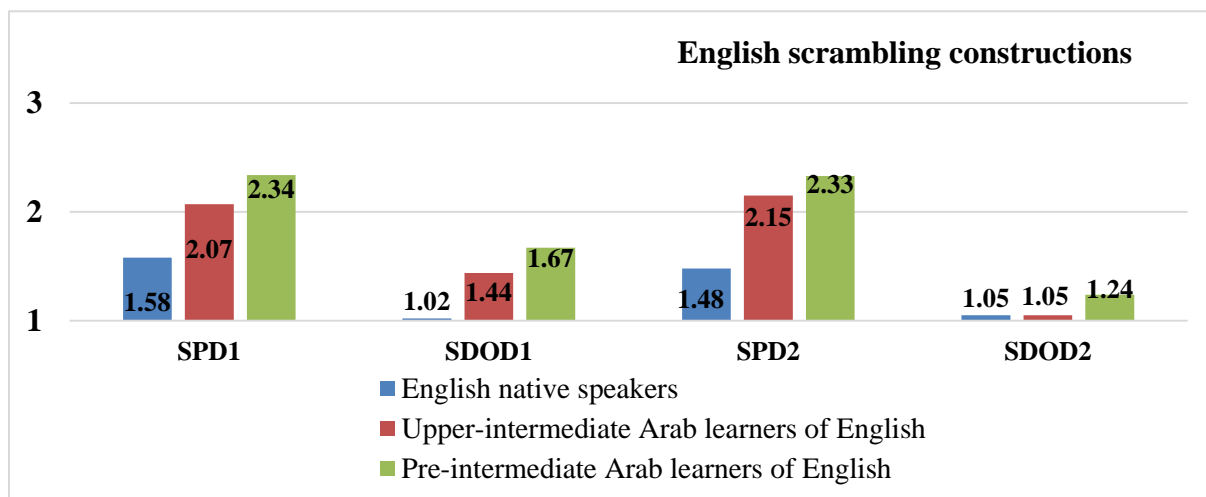
Table 35. Examples of English scrambling constructions	
The abbreviation of each structure	**Example**
SPD1	Peter gave to Kim the book.
SDOD1	Peter gave the book Kim.
SPD2	Ellis threw to Peter the pen
SDOD2	Ellis threw the pen Peter.

Table 36. Tests of within-subjects effects on English scrambling structures				
Source	DF	MS	F	Sig.
Structures	1	26.638	102.508	.000
Structures * group	2	.528	2.030	.141
Verb group	1	1.107	10.126	.002
Verb group * group	2	.221	2.024	.141
Structures * verb group	1	.988	9.153	.004
Structures * verb group * group	2	.402	3.725	.030

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A three-way mixed ANOVA was run within participant groups (native speakers of English, upper-intermediate learners and pre-intermediate learners of English), within structures (SPD vs. SDOD) and verb groups (group one {give, sell, hand, tell and show} vs. group two {pay, read, write, throw, kick, toss and shoot}). As can be observed from Table 36, there was a statistically significant interaction between the participants within structures, verb group and structures and verb group. Moreover, the interaction between structures, verb group and group was significant, F (3.725) = .402, p = .030. Due to the significant results revealed by three-way ANOVA repeated measures as in Table 36, it is interesting to follow it up with two-way ANOVA to find out the datives effects.

Table 37. Tests of within-subjects effects on the English SPD1 and SDOD1 structures				
Source	DF	MS	F	Sig.
Structures	1	8.683	44.862	.000
Structures * group	2	.014	.071	.931

Table 37 gives an overview of the statistical analysis of the SPD1 and the SDOD1 structure. A two-way ANOVA was run between participant groups (native speakers of English, upper-intermediate learners and pre-intermediate learners of English), within structures (SPD1 vs. SDOD1). It revealed that the interaction between the structures and group showed no significant result, F (.987) = .071, p < .931. Consequently, there is no interaction between group and structure to analyse any further.

Table 38. Tests of within-subjects effects on the English SPD2 and SDOD2 structures				
Source	DF	MS	F	Sig.
Structures	1	18.943	108.704	.000
Structures * group	2	.916	5.255	.008

A further two-way ANOVA was run between participant groups (native speakers of English, upper-intermediate learners and pre-intermediate learners of English), within structures (SPD2

vs. SDOD2) which shows considerable results on both the structures F (108.704) = 18.943, p < .000 and the interaction of structures and group F (5.255) = .916, p < .008, as illustrated in Table 38. These significant data appeared in Table 38 should be further analysed by running one-way ANOVA to realise the source of the interaction. Table 39 shows the analysis of the assessment of the English SPD2 and SDOD2 structures by one-way ANOVA.

Table 39. One-way ANOVA on the English SPD2 and SDOD2 structures				
Source	DF	MS	F	Sig.
SPD2	2	2.585	7.833	.001
SDOD2	2	.259	5.773	.005

As appeared from Table 39 that there disparities between the participants on the assessments of the SPD2 and the SDOD2 structures. The analysis of both the SPD2 and the SDOD2 structures showed significant results F (7.833) = 2.585, p = .001 and F (5.773) = .259, p = .005 respectively. These ANOVA analyses would be followed up with t-test to identify the source of the interaction. Table 40 and 41 show the statistical comparison between the participants on the assessment of the SPD2 structure. Interestingly, it was not only the upper-intermediate group who differed noticeably from the control group assessing the SPD2 construction (1.48 vs. 2.15, p = .004), as observed in Table 40, but also the pre-intermediate group (1.48 vs. 2.33, p = .001), as revealed in Table 41.

Table 40 Comparison between English native speakers and upper-intermediate Arab learners of English assessing the SPD2 structure in English				
Groups of participant	N	Structure	Means	Sig.
English native speakers	10	SPD2	1.48	.004
Upper-intermediate Arab learners of English	25		2.15	

Table 41 Comparison between English native speakers and pre-intermediate Arab learners of English assessing the SPD2 structure in English

Groups of participant	N	Structure	Means	Sig.
English native speakers	10	**SPD2**	1.48	.001
Pre-intermediate Arab learners of English	25		2.33	

Additionally, due to the significant disparity of the assessment of the SDOD2 structure appeared in Table 39, t-test need to be run to further investigate such a significance. The independent sample t-test revealed that there is no difference between the participants in the assessment of the SDOD2 structure as shown in Tables 42 and 43.

Table 42. Comparison between English native speakers and upper-intermediate Arab learners of English assessing the SDOD2 structure in English				
Groups of participant	N	Structure	Means	Sig.
English native speakers	10	**SDOD2**	1.05	1.000
Upper-intermediate Arab learners of English	25		1.05	

Table 43 Comparison between English native speakers and pre-intermediate Arab learners of English assessing the SDOD2 structure in English				
Groups of participant	N	Structure	Means	Sig.
English native speakers	10	**SDOD2**	1.05	.052
Pre-intermediate Arab learners of English	25		1.24	

To sum up, the significant results were found in the assessments of the BDOD2, SPD2 and SDOD2 structures due to the difference between learners' L1 and L2.

5.3 Discussion of the findings of the L2 English study

5.3.1 Introduction

The main purpose of this section is to shine a light on certain general debates on the acquisition of L2 through an investigation of the acquisition of the English dative alternation by native speakers of Arabic. What should be highlighted in an investigation of the acquisition of L2 in a case where is a partial fit between the L1 and the L2 is that there are a few questions which should receive a fundamental consideration. The questions are: To what extent does the L1 play an important role in the acquisition of L2? Will L2 learners initially assume that the L2 and the L1 are identical in terms of the morpho-syntactic structure of the dative alternation and transfer their L1 structures into the L2 grammar? Does the acquisition of new structures in the L2 exclude the L1 structures, or are L2 learners able to allow both constructions in their mental grammars?

The findings of the experimental English study results can generally be summarised by reporting that the Arab learners of English could not realise the grammaticality of the absent structure in their L1. Moreover, they had not yet unlearned the unacceptable structures in their L1.

In this current chapter, the findings of my empirical investigation of the acquisition of the English dative alternation by the Arabic native speakers are discussed based on the research questions and previous investigation of the acquisition of L2 argument structures. It begins by outlining the discussion of basic structures followed by the discussion of scrambling structures. Finally, a summary of the discussion is presented.

5.3.2 Basic structures

The dative alternation is allowed in both English and Arabic with some restrictions. An example of these restrictions is the divergence of the grammaticality of the DOD structure in English and Arabic. English (L2) allows a wider range of verbs to occur in the DOD structure than Arabic

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(L1) does. The main concern of this study is the acquisition of the English DOD construction by Arab learners. Therefore, the key question at issue in the L2 English study was whether or not Arab learners of English gain a better understanding of the semantic features and their influences on the expression of the English dative alternation. Can these L2 learners realise the grammaticality of the DOD structure with certain verbs in the Give class such as 'pay' and in the Tell class such as 'write' and 'read'? Moreover, to what extent will the native speakers of Arabic positively judge the DOD structure with the Throw class verbs in English? In this study, the sentences containing one of these verbs were categorised by the BDOD2 structure. The motivation of the current questions is raised by the partial fit between the L1 and the L2. This partial fit may mislead the Arab learners of English to ignore the L2 representation due to its ungrammaticality in their L1. The current study was designed to investigate Arab learners' awareness of the grammaticality of the BDOD2 structure in English.

The predictions of these questions in terms of the hypotheses discussed in the literature are slightly divergent. The FDH predicts that the Arab learners of English will not acquire the BDOD2 structure due to its absence in the L1 grammar and L2 learners cannot access UG to acquire such structure. The RDH also expects that these learners cannot learn the English BDOD2 structure since L2 learners are not able to acquire structures that are not allowed in their L1. Nevertheless, White's Model suggests that given the superset of L2 (English) grammar, Arab learners of English either ignore this structure as it is ungrammatical in their L1 or are able to notice the use of such structure in the L2 grammar and acquire it based on positive evidence on this structure. Moreover, the FT/FA approach states that these learners initially will transfer their L1 grammar by ignoring the grammaticality of the BDOD2 structure and they will eventually restructure their L2 grammar and acquire the BDOD2 structure.

The hypothesis related to these questions was that acquiring native-like expression of the BDOD2 construction would be reasonably straightforward for the native speakers of Arabic learning English due to the availability of positive evidence in the input. It also was anticipated that the Arab learners whose level was the upper-intermediate would perform most like native

speakers in this domain. The Arab learners of English who were at the pre-intermediate level are assumed to acquire such structure but not as well as those who were at the upper-intermediate level. It was predicted that the BDOD2 structure will be highly accepted by the upper-intermediate participants more than the pre-intermediate participants since they have been exposed to the target language for some time and they probably notice the use of such structure.

One of the most interesting and unexpected findings of this study was that the Arab participants did not accept the BDOD2 structure as their ratings were statistically lower than the native speakers' rate (2.02 : 1.78 vs. 2.74), as observed in Figure 11. As this result shows, it seems that L2 learners realised the overlap between the L1 and the L2 and indicated that the L1 and the L2 are identical. Therefore, the BDOD2 structure is allowed neither in Arabic nor in English. This current finding is contrary to the hypothesis of this thesis which was that the Arab learners of English would be able to acquire a structure that does not exist in their L1.

The unexpected current finding does not seem to be consistent with some of previous findings. One example is Mazurkewich's findings (1984). She looked at how French native speakers acquire dative structures in English. English allows both the PD and the DOD structures but French only allows the PD structure. Despite the English superset of French dative structures, French learners of English increasingly accepted the DOD structure in English. This contradictory result might be due to the fact that regarding to Longman Dictionary of English the target verbs in this study were 10 and from the top 1000 English spoken and written words expect two verbs which were from the top 3000 English spoken and written words whereas the target verbs in the current study were 7 and 4 of them were from the top 1000 words, one was from the top 2000 words, one was from the top 3000 words and one was not considered from the top 3000 English words. Such classification can make the difference since L2 learners may start to learn the top words first to assist themselves to acquire the target language. It may also be due to the proficiency level of the participants of both studies.

Moreover, Inagaki (2001) investigated the acquisition of manner of motion verbs with PPs expressing a goal in English such as *John walked into the school* by native speakers of Japanese. In English, both manner of motion verbs such as 'walk' and directed motion verbs such as 'go' are allowed to occur with goal PPs whereas Japanese only allows the directed motion verbs such as 'go' to occur with goal PPs. Therefore, L2 (English) is a superset of L1 (Japanese). It was found that Japanese learners of English who were at intermediate level positively judged the English manner of motion verbs with PPs. Inagaki (2001: 164) summarised his results by indicating that:

> 'Intermediate Japanese learners of English did not have difficulty recognizing the grammaticality of manner of motion verbs with goal PPs due to the availability of positive evidence.'

The discrepancy between Inagaki's finding and the current finding may be attributed to the fact that the focus of Inagaki's study was the acquisition of manner of motion verbs (e.g., *Tom run into the room*), which is highly productive in English as he stated. On the other hand, the focus of the current study was the acquisition of the dative alternation which is considered to be learnt in late stage of the language acquisition due to its challenge as stated by some researches, an example, Mazurkewich & White (1984). It also may be because of the proficiency level of the participants in both studies. Such an element has an important role in acquiring L2 grammar since some high proficient L2 learners expose to L2 grammar for a while which assist them to make the right decision.

Furthermore, the unexpected current finding is partly in contradiction with a recent study carried out by Zeddari (2015). He looked at the acquisition of the English dative alternation by native speakers of Moroccan. He explored the acquisition of certain English verbs such as 'give', 'donate', 'tell', 'whisper', 'throw' and 'push' by Moroccan learners. He stated that the English alternating verbs 'give', 'tell' and 'throw' are not allowed in Moroccan to occur in the DOD structure. This partial fit between these languages presents the L2 (English) superset of its

counterpart in the L1 (Moroccan). His research questions were that how do Moroccan learners of English present structurally, semantically and informationally the dative alternation? Do L1 have structural semantic and information influence at the intermediate and advanced levels? Do Moroccan L2 learners of English differentiate on the target structural, semantic and informational constraint rankings across the three proficiency levels: pre-intermediate, intermediate and advanced? The results of intermediate and advanced participants in Zeddari's study (2015) do not seem to be consistent with the current finding. He found that L2 English learners at intermediate level acquired the alternating behaviour with the investigated alternating verbs 'give', 'tell' and 'throw'. However, they overgeneralised the non-alternating verbs 'donate', 'whisper' and 'push' to take the DOD structure. Advanced learners, on the other hand, accepted the grammaticality of the DOD structure with 'give', 'tell' and 'throw', they also rejected the DOD structure with 'donate'. Nonetheless, they overgeneralised the use of the DOD structure with the investigated non-alternating verbs 'whisper' and 'push'. He argued that the early appearance of the DOD structure with 'give' and the gradual appearance of the DOD structure with 'tell' and 'throw' provide evidence of the access to UG even though there is divergence between the L1 and the L2 grammar. He further argued that the success and the failure of accessing UG could be determined by the input which L2 learners are exposed to. The contradictory result may be first due to the proficiency levels of the current participants. They were at the pre-intermediate and the upper-intermediate levels whereas Zeddari's participants were at intermediate and advanced levels. It may also be due to the target items. The target items in Zeddari's study ('give', 'tell' and 'throw') might be more common than the current target items ('throw', 'kick', 'toss', 'shoot', 'read', 'write' and 'pay'). Finally, the occurrence of the target verbs of Zeddari's study in the DOD structure when the Goal argument realised as a pronominal clitic as in illustrated in (135) may trigger the participants to draw attention to the use of the DOD structure when the internal arguments are lexical items.

(135) أعطيتُه الكتابَ

    a'tay-tu-h   alkitaab-a

    gave-I-him   the book-Acc

    'I gave him the book.'

On the other hand, the finding of the acquisition of the BDOD2 structure corroborates with certain previous studies such as those obtained by Montrul (2001) who found that Turkish and Spanish learners of English had difficulty recognising the grammaticality of a sentence such as *The captain marched the soldiers to the tent* and these participants could not acquire the transitivity alternation with a verb like 'march'. Moreover, this finding matches those findings in Bley-Vroman & Yoshinaga (1992) who examined the FDH by looking at whether Japanese learners can distinguish between alternating and non-alternating English verbs. It was found that Japanese learners could not differentiate the alternating verbs from the non-alternating verbs. Japanese learners did not realise the grammaticality of the DOD structures with some NNR verb classes since they were not present in Japanese.

Furthermore, this finding is in agreement with the results of an investigation of how Chinese L2 learners acquire English *wh*-operator movement in overt syntax which is absent in their L1; this study was undertaken by Hawkins and Chan (1997). They (216-17) found that:

> They become progressively more accurate in their intuitions about [CP . . . gap] constructions in simple RRCs. But their mental representations for these phenomena appear not to involve *wh*-operator movement, because their accuracy and ability to correct Subjacency violations declines with increasing proficiency. This is in contrast to age- and proficiency-matched French-speaking learners of English whose accuracy on and ability to correct Subjacency violations increase with proficiency. This would be expected if learners are constrained by the feature specifications of functional categories in their L1s. French allows *wh*-operator movement,

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Chinese does not. At the same time, the Chinese subjects' mental representations, although different from those of native speakers of English, appear to be constrained by UG because they correctly reject non-UG-licensed [*wh*-phrase . . . gap] constructions like **The girl cried [when e lost her way]*, even though a null subject is possible in this environment in their native Chinese.

Furthermore, Inagaki (2002) investigated how Japanese speakers acquire the directional and locational reading of the manner of motion verbs with PPs in English. In other words, to what extent Japanese learners can realise the grammaticality of the directional reading of English manner of motion verbs (e.g., 'run', 'walk') with locational and directional PPs (e.g., 'above', 'under'). For instance, *Mike swam under the bridge* is a sentence which can be interpreted either as a locational or directional reading. In Japanese, nevertheless, such sentence could only be interpreted as a locational reading. The results revealed that nearly three quarters (70%) of the Japanese learners of English judged the test sentences as locational only, whereas the control (native English) group all judged them as either directional or locational reading. The researcher (2002: 21) concluded that:

> Japanese speakers failed to notice positive evidence for target properties and thus [could not] broaden their interlanguage grammar.

Japanese speakers could not realise the possibility of the directional reading of the English example *Mike swam under the bridge* as Arabic speakers could not realise the grammaticality of the English sentence like *Susan paid the man ten pounds*. The failure of the realisation of the possibility and the grammaticality of L2 structures by these participants may be due to the superset of their L2.

A further corroborative study was carried out by Al-Thubaiti (2009) who investigated the acquisition of the English vP ellipsis by Arabic native speakers. She reported an investigation

of the acquisition of auxiliary stranding in English as a phenomenon of vP ellipsis. Her focus was on the acquisition of the subtle divergence between the auxiliaries 'be' as in *John slept and Mary was ~~sleeping~~ too and 'have' as in *Peter saw your parents last week, but he hasn't ~~seen them~~ since*. When stranded as a result of verb elision under partial identity conditions. She referred to Rouveret (2006) to explain the divergence between the ellipses with the auxiliary 'be' and the ellipses with the auxiliary 'have.' According to him, 'be' stranding is unacceptable since the progressive suffix (-ing) carries an aspectual interpretable feature which cannot be deleted unless the progressive interpretation is recoverable. However, 'have' stranding is grammatical due to the participle suffix (-en) which carries an uninterpretable feature that is semantically irrelevant. Therefore, it has to be deleted. Her questions were the extent to which Arab learners of English at advanced level can acquire the possibility of the English auxiliary stranding despite the differences between their L1 and L2 in this domain. Can they also realise the subtle divergence between 'be' and 'have' when stranded in partial identity conditions? She summarised her results by stating that Arab learners of English acquire that vP ellipsis is possible in L2, but they have not yet acquired the conditions that preclude auxiliary stranding. Their interlanguage grammars disallow vP ellipsis in partial identity conditions regardless of auxiliary type. Al-Thubaiti (2009: 199) concluded that

> our results from auxiliary stranding are consistent with the 'Interpretability Hypothesis', in that the acquisition of uninterpretable features causes difficulty for L2 learners even at advanced levels of proficiency. As shown from the accuracy judgments of our Arabic EFL learners, although they have learned that auxiliary stranding is possible in English contra their Arabic L1 grammar, they have not learned the conditions under which vP ellipsis is precluded. Therefore, they failed to capture the subtle contrast between progressive *be* stranding and perfect *have* stranding in partial identity conditions (*John slept and Mary was too, vs. Peter saw your parents last week, but he hasn't since*). They seem to have a deletion strategy that is not sensitive to feature interpretability, but only to strict surface identity. In their grammars, verb elision is apparently

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constrained by a requirement of strict lexical identity between the antecedent verb and the elided verb. This was indicated from their high levels of accuracy judgments on strict identity conditions. Therefore, they reject auxiliary stranding across the board in non-identical conditions.

Another support finding was recently found by Zeddari (2015). He found that the pre-intermediate learners rejected the English DOD structure with verbs such as 'give', 'tell' and 'throw' due to the L2 (English) superset of its counterpart in the L1 (Moroccan). In another words, they failed to acquire the structure that is not allowed in their L1 due to L1 transfer.

In terms of discussing the current finding on light of the acquisition of the semantic features, it is the focus of this study to explore the acquisition of English semantic features. The previous investigations of the acquisition of the semantic constraints in the English dative alternation showed varied and contradictory findings. An example can be revealed in the investigation undertaken by Bley-Vroman & Yoshinaga (1992), who found that Japanese learners could distinguish between the alternating verbs classes and the non-alternating verbs classes with real verbs. However, these learners could not do so with the identical verb classes with made up verbs. Sawyer (1996), on the other hand, found that Japanese learners were able to distinguish between the Throw class verbs and the Push class verbs despite the absence of such a distinction in their L1. Moreover, Inagaki (1997) explored the acquisition of the English NRRs by native speakers of Japanese and Chinese. He found that Japanese learners could distinguish the Tell class verbs from the Whisper class verbs while they could not do so with the Throw class verbs from the Push class verbs. The interpretation of these unexpected results was built on the selective access to UG and the frequent input. Chinese learners performed well in the distinction between the Tell and Throw classes but they could not do so with the Throw and Push classes. This result could be evidence for the FDH.

Undertaking the investigation of the acquisition of the English dative alternation by the native speakers of Arabic to explore the extent to which the current participants well resemble the target

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semantic constraints. The findings of this investigation showed that in spite of the acquisition of the BRRs which are general semantic constraints these learners could not acquire the NRRs which are the specific semantic constraints that govern the dative alternation in English resulting in the failure of acceptance of the grammatical structure in the L2. This undergeneralisation can be neatly accounted for by the FDH and the RDH.

Turning now to look at the potential hypotheses of L1 transfer, the finding of current study could possibly support certain of them. First, the idea of Adjémian (1983), who suggested that L2 learners will be too conservative and fail to incorporate L2 properties that are not allowed in their L1 grammar. Second, the FDH which states that L2 learners are only able to acquire what is instantiated in their L1. Therefore, based on the FDH account, L2 learners will never overcome overgeneralisation or undergeneralisation errors. Moreover, RDH which also states that L2 learners cannot acquire some features associated with uninterpretable features not already available in their L1 grammar such features will pose a learning problem for adult L2 learners since they are inaccessible beyond a critical period. Due to the initial state of these participants, this finding showed evidence to support the FT/FA approach which also states that L2 learners would initially transfer their L1 grammar and ignore L2 structures that are not instantiated in their L1 grammar.

It might be a possible explanation for the weaker acceptance of the BDOD2 structure as a consequence of the unavailability of this structure in the L1 grammar. L2 learners will accept what is available in their L1 due to their assumption that the L1 and the L2 are the same and what is ungrammatical in the L1 has to be ungrammatical in the L2. The negative transfer (ignoring L2 grammar due to its absence in L1) revealed in this study by the Arab learners of English may simply reflect the insufficient evidence available to them which might be related to the low proficiency levels. L2 learners at low proficiency levels seem to be, to great extent, affected by their L1 due to the heavy reliance on the previous experience (L1 grammar) to fill gaps in the target language grammar. Another possible explanation could be that these learners are not sensitive enough to the NRRs which govern the dative alternation in English to realise

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the occurrence of the Throw class verbs and several verbs in the Give class such as 'pay' and in the Tell class such as 'read' in the English DOD structure. The delayed acquisition of the BDOD2 structure is due to difficulties in acquiring the semantic features (NRRs) in the English dative alternation. Such undergeneralisation errors can be easily overcome due to the availability of positive evidence.

The question that may be raised here is that how Arab learners of English eventually recover from the phenomena of undergeneralisation. Based on White's (1991) argument, the phenomena of undergeneralisation in the acquisition of L2 argument structures is easier to be solved than overgeneralisation. Initially, once L2 learners assume a restrictive grammar, L2 positive evidence will probably draw their attention to extend their L2 grammar. Once the Arabic native speakers notice the grammaticality of sentences such as *Ellis threw Peter the pen* in English, they will restructure their grammar to incorporate the English dative alternation that are not allowed in their L1.

Along with the investigation of the syntax-semantics interface conducted by Oh (2010) which proposed that the influence of negative transfer may be overcome once the proficiency level increased. As she found that certain participants particularly at advanced level could acquire the semantic properties associated with the benefactive DOD structure progressively but surely. It also was revealed that although the Arab participants could not acquire the BDOD2 structure, some individuals, particularly at the upper-intermediate level, were able to acquire the semantic constraints related to the dative alternation gradually. Accordingly, it may be suggested that the acquisition of the semantics of the dative alternation can assist learners to acquire the semantics of the BDOD2 structure, which in turn promote learners to correctly accept such structure. Moreover, it was suggested by Oh (2010) that the acquisition of the semantic constraints of a structure leads to the acquisition of the syntactic configuration of that structure. The syntactic and semantic relationship should be investigated to draw a definitive overview on the relation between them. Furthermore, it might determine the linguistic knowledge and mechanisms are occupied in this process. Learning a verb entails learning its semantic roles related to the

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inherent meaning of that verb (see Fillmore 1977; Goldberg 1995). Equally, learning a construction entails learning its associated semantics (Tomasello 1992, 2000; Goldberg 1999). Therefore, it may be assumed that the acquisition of the English DOD construction necessitates the acquisition of its semantic restrictions. The present study attempts to address the raised issues by examining Arab learners' knowledge of English semantic constraints governing the DOD construction. An exploration of the learners' knowledge of the relevant semantic restrictions provides a good understanding of the recovery from the negative transfer effects. As stated by the researchers, the acquisition of semantic features of a structure is the prior step to acquire that structure. Based on this suggestion, the Arab learners should learn that the English DOD construction encode certain semantic features. Therefore, the acquisition of the semantic features associated with the DOD structure precedes the acquisition of its syntactic internal arguments.

Moving now to the question of the acquisition of the BPD structures (e.g., *George paid ten pounds to Jay* and *Noah sold the car to Billy)* and the BDOD1 (e.g., *Tom told the child the story*), these structures were predicted to be acquired due to their availability in the L1. This study found that the Arabic speakers positively judged these examples. These results are in agreement with those obtained by Hopp (2010) who investigated the acquisition of the morpho-syntax of word order variation in German by native speakers of English, Dutch and Russian, particularly the knowledge of case marking for syntactic function assignment. The aim of the study was to investigate the ability of L2 learners to have target knowledge of German case inflection and word order variation. Four experiments were carried out to investigate knowledge and processing of inflection in L2. It was found that L1 Russian learners of German outperform L1 English and L1 Dutch learners of German, both in terms of acceptability ratings and reading times. As assumed by Hopp (2010), this finding can be clarified through the constructional convergences between Russian and German with reference to case. Such findings are in line with the FDH and the RDH which state that L2 learners will easily acquire the features that exist in their L1.

A further question of this study was which of the English dative alternation structure the PD or the DOD would be earlier acquirable by the native speakers of Arabic. The expectation for this key question was built on the findings of several previous researchers such as Mazurkewich (1981, 1984, 1985) and Hawkins (1987). Their findings revealed that the PD construction was easier to acquire than the DOD construction. Therefore, it was expected that the Arab learners will acquire the PD structure earlier than the DOD structure.

One interesting finding in the current study is Arab learners of English accepted the BPD1 structure (e.g. *Noah sold the car to Billy*) earlier and more than the BDOD1 structure (e.g. *Noah sold Billy the car*) (2.87 and 2.78 vs. 2.61 and 2.53). Moreover, they positively judged the BPD2 (e.g. *George paid ten pounds to Jay*) structure more than the BDOD2 (e.g. *George paid Jay ten pounds*) (2.93 and 2.82 vs. 2.00 and 1.78). These results are in keeping with previous observational studies, which is that the PD construction is acquired early compared to the DOD construction by L2 learners. A well-known example of these studies was conducted by Mazurkewich (1981, 1984, 1985). These studies found that the participants accepted the PD structure before the DOD structure.

Mazurkewich (1981, 1984, 1985) found that the PD structure is easier acquired by L2 learners. As illustrated in the previous studies, she investigated the theory of markedness associated with the UG which claims that a few rules are marked while the rest are unmarked. In accordance to her interpretation, the PD structure considered as an unmarked rule which is a core grammar that may well be frequent and allowed cross linguistically. Consequently, such structure is predicted to be acquired straightforwardly on the base of the early exposure to the L2 input. However, the DOD structure belongs to a marked rule class which is not core grammar. These rules are believed to be complicated, infrequent and not allowed by every language. Such rules are expected to be hard to learn and learners should receive positive evidence to assist them to acquire such rules. She also argued that the PD structure is straightforwardly acquirable due to its wide productivity. This generally means that all verbs occur in the DOD structure must allow the PD structure but not necessarily vice versa (Hawkins 1987).

Another study which was compatible with the finding of the current study of the earlier acquisition of the PD structure was carried out by Hawkins (1987). He found that the PD structure is learnt prior to the DOD structure. However, he interpreted his finding from Mazurkewich's finding differently by mentioning that markedness can only be a point in the second stage in the acquisition of the dative alternation procedure. He (1987: 46) disputed that:

'Mazurkewich's original discovery that the [_NP PP] construction is acquired prior to the [_NP NP] construction is not the only factor involved in the acquisition of the dative alternation; in fact, it represents only one point of stage 2 in the acquisitional sequence when learners accept lexical NPs in the [_ NP NP] frame with some verbs, but not all verbs.'

He also believed that the dative alternation can be acquired by the progressive introduction of syntactic features into the L2 learners' grammars. They will start by differentiating between the pronominal and lexical objects. This is followed by distinction verbs that take the *to*-PP from those take the *for*-PP and late learners will distinguish native verbs from Latinate verbs.

Le Compagnon (1984) argued that L1 and L2 learners identically acquired verbal lexical items. She further argued that L2 learners' errors are caused by misapprehension of the marked and unmarked structures in the L2. Such misapprehension possibly stemmed from the L1 influence. She proposed that L2 learners generalise what are only unmarked rules in their L2. This is due to their unmarkedness in the learners' L1. On the other hand, it would be impossible for them to generalise what are marked rules in their L1 unless positive evidence is received from the L2. She found that the PD structure was accepted in the nominal dative. Her empirical study might be considered as evidence of the L1 influence given that the misapprehension of the marked and unmarked structures in the L2 was built on the participants' knowledge of their L1.

Tanaka (1987) also suggested that markedness and transfer are the most essential elements for the preference of the PD structure to the DOD structure. His possible interpretation was that the preference of the PD structure by Japanese learners due to a couple of reasons: its unmarkedness in the L1 and its acceptability in English without almost any restrictions.

An extra study revealed that the PD structure acquired before the DOD structure conducted by Mykhaylyk et al. (2013). They investigated the acquisition of the English dative alternation by Russian and Ukrainian adults and 3-6-year-old children. They found that children preferred the PD structure. They stated that processing difficulties, complexity of the syntactic structure or pronominality could be a possible interpretation for the dispreference for the DOD structure in the acquisition of the English dative alternation as in L1. They (2013: 271) proposed that:

'These findings might be indicative of a preference for the underlying syntactic structure in child grammars and/or for the use of prosodic means to express the same meaning, rather than a lack of knowledge of the pragmatic principle Given-before-New at this developmental stage.'

Moreover, Anderssen et al. (2014) who looked at the acquisition of the Norwegian dative alternation by Norwegian children. They explored the pragmatic principle (givenness) which led the native speakers of Norwegian syntactically to choose one word order over another. They found that children preferred the PD structure to the DOD structure as the basic word order in various discourse contexts. They (2014: 72) suggested that:

'Children's behaviour is not a result of a pragmatic deficit or an immature syntactic component per se but rather a failure to consistently integrate the two.'

De Cuypere et al (2014) reported an investigation of the acquisition of the English dative alternation by Russian native speakers. An acceptability judgement test was conducted to investigate the choice of one dative structure before the other. A subtle preference for the use of

the PD structure was revealed and this subtle preference was attributed to the language acquisition process as suggested by the Processability Theory (PT) which implies that constructions which are easiest to process will be learned earlier than constructions which are harder to process despite the convergences between the L1 and the L2.

Jäschke & Plag (2015) examined the acquisition of the English dative alternation by native speakers of German. They intended to investigate the preference of the dative structures, the PD or the DOD in English by advanced German native speakers. They also investigated the extent to which German learners' preferences are affected by the same constraints that have been assumed to effect L1 learners' preferences. It was revealed that the PD construction was slightly preferred by the participants. They argued that L2 learners are effected by the same factors, for instance, animacy of recipient, pronominality of theme and definiteness of recipient as L1 learners but to a lesser degree. The results suggested that L2 learners initially do not make use of probabilistic constraints despite the constraints being effective in the L1 and only gradually learn a sensitivity of the constraints that govern the preference of the two structures.

This finding lends evidence to support the claim that the PD structure is acquirable earlier than the DOD structure, as the learners in this study show slightly increased preference to the PD structure even though the DOD structure is more popular in their L1. The Arab learners accepted the BPD1 structure (2.87 vs. 2.78) and the BDOD1 structure (2.61 vs. 2.53). This acceptance may be due to the availability of both structures in their L1. The preference of the PD structure over the DOD structure could be a lack of L1 transfer as the DOD structure is preferred in L1. The lack of L1 influence in this study might be due to the methodology used to collect the data (written judgment test by pre-intermediate and upper-intermediate learners of English). First, the finding could possibly be due to the low proficiency level of the current L2 learners. It may be attributed to the late acquisition of the dative alternation. Including more advanced Arab learners of English may perhaps make the transfer more obvious. Second, the data for this study were only gathered by a written test. Results may differ, if other tests are used, such as translation task in the acquisition of the English dative alternation by native speakers of Arabic.

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However, the lack of influence in performance will possibly attribute to the overruling by a general preference for the PD structure. The general preference for the PD structure could be a type of the confirmation for certain ideas. One is that Markedness Theory. The finding of the English study is consistent with those of Mazurkewich, Hawkins, Le Compagnon and Tanaka who found that the PD construction is learnt earlier than the DOD structure. Their interpretation was that the markedness is a key aspect in the acquisition of the dative alternation combing to other elements, for instance, L1 transfer, overgeneralisation or positive evidence. However, the results of current study therefore may be interpreted as an evidence of the importance of markedness, positive evidence and overgeneralisation in the acquisitional process of the dative alternation in the L2.

It is also consistent with the idea of the language acquisition process as offered by the PT (Pienemann 1998). The PT implies that constructions which are easier or easiest to process, will be learned earlier than constructions which are harder to process despite the convergences between the L1 and the L2. The PT was corroborated through a study run by Håkansson et al. (2002). They explored the acquisition of L2 German word order by Swedish learners. Both German (L2) and Swedish (L1) have the V2-rule, as illustrated in (136):

(136) dann   kauft   das Kind   die Banane.   (German)

      sen   köper   barnet   bananen.   (Swedish)

      then   buys   the child   the banana

      'Then the child buys the banana.'

Regardless of the structural similarities between the L1 (Swedish) and the L2 German the results displayed that V2 is not transferred from Swedish to German at the initial state. Learners at beginning level first produced sentences without V2 (*Dann das Kind kauft die Banane*), which are unacceptable in both languages. Håkansson et al. (2002) stated that the non-transfer of the V2-rule is a result of its higher processing cost. Sentences without V2 (i.e., adverb + SVO) are much easier to process.

With respect to the preference of the English PD structure to the DOD structure by the Arab learners. Arabic, similar to German and Russian, allows the dative alternation and a variety of word order which reflect principles, such as pronoun-before-noun. Such principles are similar to the ones in English. As outlined in the present study as well as Jäschke & Plag (2015) and De Cuypere et al (2014). The question is whether the preference structure in L1 is transferred or the L2 principles are acquired. Putting the findings of the two previous studies and the current study together, it may be possible to indicate that the principles are acquired, rather than transferred. The beginner Russian learners of De Cuypere et al's study (2014) do not follow the ordering of their L1 and show a preference for the easily processable PD structure, the advanced German learners of Jäschke & Plag's study (2015) showed only a slightly increased preference for the PD structure, and at the same time follow a number of factors, which also the native speakers follow and the pre-intermediate and the upper-intermediate Arab learners of this study preferred the PD structure to the DOD structure. On the other hand, the preference of the PD structure over the DOD structure by the native speakers of Arabic could possibly indicate that these learners were influenced by the type of dative verbs in the L1. This claim is supported by the fact that the Arab learners preferred significantly the BPD2 structure (2.93 vs. 2.82) to the BDOD2 structure (2.02 vs. 1.78), as Table 51 shows. The significant preference may be owing to the fact that the BDOD2 structure is not fully acquired by the current Arab learners of English due to its ungrammaticality in their L1 as discussed in Chapter 2. To properly answer the questions whether structure or a certain principle is being transferred, more research should be conducted by replicating the present study with learners of languages that do not allow a flexible word order. An example of such language is Japanese. Tanaka (1987) argued that Japanese learners of English follow the end-weight principle, which may be a suggestion of the acquisition of the principles rather than the transfer.

It is worth mentioning that beside the simplicity and the unmarkedness of the PD structure, the preference of the PD structure over the DOD structure could also be related to the discourse principles such as given and new information which suggested to be explicitly taught to non-

native learners as Chang (2004: 167) suggested when he discussed the preference of the PD structure over the DOD structure by the participants in his study:

> 'It could be interpreted as they either had acquired PD earlier than DOD or had less difficulty, cognitively, accessing to PD than DOD, which in turn supported the theory of markedness that the unmarked form is easier to acquire. A main suggestion resulted from the study is that discourse principle should be taught explicitly, combining with sentences in context, to EFL students. Otherwise, regardless of the amount of input they receive, they are not able to be aware of the existence of these principles underlying sentences in discourse.'

A further factor that assumed to have an influence on the choice of the dative alternation is the type of NP (Aissen 1999; O'Connor et al 2004). The type of NP is summarised in the so-called harmonic alignment pattern[7]. Jäschke & Plag (2015) provided evidence for the role of certain factors such as animacy, pronominality, definiteness, concreteness and number of the two internal arguments which influence the acquisition of the English dative alternation as L2. It was showed that German learners of English are influenced by discourse factors as the same factors by which the L1 speakers in the study are influenced. However, it is hard to interpret the tendency towards the PD structure in the current study as a result of the previous factors since the investigated sentences do not directly explore these factors. It was a limitation of this study that, it was not able to measure the exact influence of the different factors, as our design did not control for an equal distribution of the different factors over the test sentences. This question should be tackled in future studies.

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[7] Harmonic alignment with syntactic position: animate before inanimate, definite before indefinite, pronoun before non-pronoun, less complex before more complex and given before new. (Adapted from Bresnan et al., 2007).

An extra factor used to effect the occurrence of a specific structure in a certain context is syntactic weight. This factor is sometimes known as the end-weight principle (Wasow 2002). This factor has influence on the dative alternation (Bresnan et al., 2007; Collins 1995). Therefore, example (137a) is preferred over example (137b).

(137) a. I gave Maya the most beautiful and very expensive ring.
        b. I gave the most beautiful and very expensive ring to Maya.

It was a further limitation of this study, it did not involve any example such as (137) to measure the effect of the end-weight principle. This factor ought to be investigated in future studies.

Overall, the preference of the PD structure to the DOD structure in the current study may be interpreted as evidence of the importance of markedness, processability and positive evidence in the acquisitional process of the dative alternation in the L2. The PD structure is easier to learn than the DOD structure. L1 transfer can be observed in the preference of the BPD2 structure over the BDOD2 structure as the BDOD2 structure is ungrammatical in the L1 grammar. These learners were influenced by the L1 and ignored the grammaticality of the BDOD2 structure due to its absence in the L1.

5.3.3 Scrambling structures

The allowance of the SD structures in Arabic but not in English is an instance of the divergence between these languages in the domain of the dative structures. The concern is to perceive how Arabic native speakers deal with the SD structures in English. Therefore, the central question regarding the unlearning of the SD structures in the investigation of the English dative alternation is whether or not Arab learners have the ability to come to know the ungrammaticality of the SD structures with the following verbs: 'give', 'sell', 'hand', 'tell' and 'show'. This structure in the current study is known as the SDOD1 structure. The hypothesis

regarding this question was that the Arab learners of English would struggle to unlearn that the SDOD1 structure is ill-formed in L2. It was predictable that the Arab participants at both levels the pre-intermediate and the upper-intermediate will continue to use the SDOD1 structure and there may well be no significant disparities between them with respect to the use of such structure since this structure is not grammatical in the L2, these L2 learners may not receive enough input to inform them not to use such a structure in English.

The results show that Arab learners of English rejected both the SDOD1 structure (e.g. *William handed the paper Steven*) and the SPD1 structure (e.g. *Adam showed to Jay the book*). No significant disparity between these participants and the native speakers of English can be found in the assessment of these two structures, as can be observed from Table 37. Moreover, Arab learners of English rated the SPD2 structure (e.g. *Messi shot to Iniesta the ball*) as a grammatical sentence. There was a significant difference between the non-native speakers and the native speakers in judgement of the SPD2 structure, as Tables 40 and 41 show.

To sum up, Arab learners of English judged all the SD structures as grammatical and could realise their ungrammaticality in English. These results of the unlearning of the SD structures are not consistent with those of previous studies which support the assumption that L2 learners will face difficulty to overcome overgeneralisation. One instance is a study conducted by White (1987) who investigated how English adults acquire the dative alternation in French as L2 and found that these learners used the DOD structure in French which is ungrammatical. White (1991) again explored the influence of L1 on the acquisition of L2 argument structure and found that where L1 is a superset, the partial fit between the L1 and the L2 misled the learners to incorporate aspects of the L1 argument structure into the interlanguage lexicon. Another example is Inagaki's (2001) study when he investigated the acquisition of manner of motion verbs with PPs by English learners of Japanese. It was found that L2 Japanese learners found it difficult to unlearn that manner of motion verbs with PPs are ungrammatical in Japanese.

Moreover, Oh & Zubizarreta (2006) investigated the acquisition of the English dative alternation from three different L1 backgrounds: L1 Japanese, L1 Korean and L1 Mandarin. In terms of the Mandarin learners of English, due to the presence of the goal morphology in their L1 and its absence in their L2, led them to accept all goal DOD structures the grammatical example (e.g. *Mary gave Peter the book*) and the ungrammatical example (e.g. *Mary explained Peter the answer*). The results of the acquisition of the English dative alternation by Mandarin supported by the findings of the acquisition of the SD structures in English by the native speakers of Arabic, since both the Arab learners and the Mandarin learners accepted what are not allowed in their L2.

Furthermore, Zeddari (2015) explored the acquisition of the English dative alternation by native speakers of Moroccan. His concern was to investigate the acquisition of the dative alternation with certain English verbs such as 'give', 'donate', 'tell', 'whisper', 'throw' and 'push'. The result of this study revealed that Moroccan learners of English positively judged the SPD structure in the L2. According to the assessment of the SPD structure in these two studies, L2 learners showed a clear acceptance of these structures which may trigger by the flexibility of their L1 word order.

On the other hand, the findings presented from the investigation of the acquisition of the English dative alternation by Japanese and Korean carried out by Oh & Zubizarreta (2006) are in agreement with the current results. Since L2 (English) lacks the benefactive morphology, it was predicted that Japanese and Korean learners would not acquire the English benefactive DOD structures whether the grammatical one (*e.g. Ann baked a cake for her children*) or the ungrammatical one (e.g. *Ann finished her children the painting*). The results revealed that Japanese and Korean learners rejected the benefactive DOD structure, grammatical as well as ungrammatical. These findings are in agreement with the rejection of the SD structures in English by the native speakers of Arabic as found in the current study since Japanese and Korean learners rejected the ungrammatical structure in the L2 in spite of its grammaticality in their L1

and the current Arab learners rejected the ungrammatical structures in the L2 grammar due to their occurrence in the L1.

A further study which revealed similar findings conducted by Baten & De Cuypere (2014). They reported an examination of the acquisition of the German dative alternation by Dutch speakers. L1 (Dutch) is superset of its L2 (German) counterparts. The PD and the DOD structures are allowed in Dutch whereas the DOD structure is only allowed in German. Their interest was to look at the judgement of the PD structure in German by Dutch speakers due to its ungrammaticality in L2. The preference of the DOD structure, even when the PD structure is preferred in the Dutch equivalent sentence, seems to provide an indication that these learners realise the ungrammaticality of the PD structure in L2.

These findings do not provide support for the assumptions of White (1991). In case of the superset of L1, White assumed that L2 learners will struggle to unlearn that some L1 structures are not allowed in the L2. L2 English learners faced difficulties to unlearn the SDOD1 structure and the SPD constructions. Moreover, these results are not in agreement with the FDH and the RDH which state that L2 learners cannot overcome overgeneralisation in this domain. It also can be evidence to support the FT approach since these L2 learners acquired L2 grammar by positively rejecting the SD structures which are not grammatical in English.

The current results suggest that the L1 SD structures are not being accepted in the L2 as grammatical structures even though they are grammatical in their L1. This suggests that the Arab learners of English realised the ungrammaticality of such structures in English due to the availability of negative evidence which would inform the learners of the ungrammaticality of these structures in English. Without relevant evidence, these learners would get stuck in the L1 representation, failing to acquire the L2 representation.

As mentioned in the literature review, the L1 transfer will possibly be motivated by the partial fit between the L1 and the L2 argument structures. The L1 transfer is a challenge for L2 learners

when the L2 is a subset of the L1. The issue ought to be tackled is that how can Arab learners of English overcome the phenomena of overgeneralisation? Regarding White's (1991) argument, the overgeneralisation is harder to unlearn since there is no negative evidence to inform L2 learners their L1 grammar is not possible in the L2. In such a circumstance, L2 learners will possibly need to rely on the indirect negative evidence by realising the absence or the infrequency of the ungrammatical structure. Otherwise, the direct negative evidence to inform the learners what is not grammatical in the target language must be provided. The availability of negative evidence, which is the information about the ungrammaticality of some structures, was required by White (1991) and Inagaki (2001). White (1991) suggested that English native speakers, who participated in her study of argument structure in second language acquisition as learners of the French dative alternation, needed to be provided with negative evidence in order to notice the ungrammaticality of the DOD structure in French. Inagaki (2001) also proposed that English learners of Japanese should receive negative evidence to inform them what is not allowable to appear with goal PPs in Japanese.

5.3.4 Summary

This study sets out to determine the influence of L1 on the acquisition of L2 argument structures by looking at the acquisition of the English dative structures by native speakers of Arabic, in a couple of circumstances: (1) the L1 (Arabic) dative structures are superset of those allowed in the L2 (English); (2) the L2 (English) dative structures are superset of those allowed in the L1 (Arabic).

English and Arabic both allow the dative alternation with some differences between them. One is that English allows a wider range of verb classes to occur in the DOD structure more than Arabic does. With regard to this difference, this study sought to investigate the acquisition of the BDOD2 structure in English by the native speakers of Arabic. The extent to which L2 English learners have the ability to realise the grammaticality of the BDOD2 construction in the

L2 even though such construction does not exist in their L1? The expectation of this question was that the L2 learners could perceive the grammaticality of this structure in English since positive evidence would be found and available in the input. The result of this investigation showed that these learners could not acquire this construction. This finding was unexpected and suggests that L2 learners sometimes are conservative by ignoring some L2 grammatical structures since they are not presented in their L1. It supports those who believe that L2 learners cannot learn what is absent in their L1. Moreover, it supports the L1 transfer during the initial stage of the acquisition of L2 such as the FT/FA approach.

An additional finding regards the acquisition of the BPD1, BPD2 and BDOD1 structures. These structures are available in both the L1 and the L2. The current L2 English learners judged them as grammatical constructions. The important question was which structure would be earlier learnt by these L2 learners. The anticipation was made in the light of the finding of several researchers such as Hawkins (1987) who found that the PD structure was acquired earlier than the DOD structure by French learners of English. Therefore, it was anticipated that the PD structure would be firstly acquired by L2 English learners. The results displayed that Arab learners of English acquired the BPD1 and the BPD2 structures before the BDOD1 and the BDOD2 structures. The early acquisition of the PD structures could be attributed to their unmarkedness and support the PT. The ungrammaticality of the BDOD2 structure in the L1 is also a key aspect in the earlier acquisition of the BPD2 structure.

The second disparity between English and Arabic is that English has a fixed word order whereas Arabic has a great deal of freedom in word order of the two internal arguments: Goal-Theme and Theme-Goal. This means that the SD constructions are grammatically well-formed in Arabic but not in English. With respect to this difference, the present study aimed to question the unlearning of the SD constructions by L2 learners whose L1 allows such structures. The question was are Arab learners of English aware of the unacceptability of the SD structures? It was expected that these learners might struggle to unlearn that the SPD and the SDOD1 are not acceptable in the L2 grammar due to the absence of negative evidence. It was also expected that

no statistical disparity between the experimental participants might be noted in judging the SD structures. As anticipated, Arab learners accepted these ungrammatical structures in English.

The results also revealed an expected finding that no significant differences between the assessments of the Arab learners of English on the judgement of the SDOD1 structure although the upper-intermediate participants were aware of the ungrammaticality of the SDOD1 structure more than the pre-intermediate participants. This finding provides further evidence for White's (1991) assumption that L2 learners will face difficulties to unlearn the ungrammatical structures in L2 when it is a subset of the L1's counterparts. It also supports the FDH which states that L2 learners cannot overcome overgeneralisation. Moreover, it is evidence of the L1 transfer through the initial stage.

Chapter 6 Results and discussion of the L2 Arabic study

6.1 Introduction

This chapter aims to set out the examination of the acquisition of the Arabic dative alternation by native speakers of English by presenting the results of the L2 Arabic study and discussing them regarding some SLA hypotheses and previous researches. This chapter begins by presenting the results of the L2 Arabic study. This presentation is divided into two parts. The first part is about the results of the acquisition of the basic structures. The second part shows the results of the acquisition of the scrambling structures. It will then go on to discuss the results. The discussion of the results sheds light on the acquisition of the basic structures as well as the scrambling structures. Finally, a summary of the results and the discussion is presented.

6.2 Results

6.2.1 Introduction

SPSS (21.0) was used to obtain the inferential statistics which were built on the mean of participants' responses for each construction of the dative sentences. Three-way ANOVA repeated measures was used to determine that there is a difference between groups. T-test was later utilised to determine what the differences are. To compare the performance of the native speakers to the performance of second language learners groups, a nonparametric test was utilised due to the divergence of the number of participants in these groups. The independent-samples t-test, however, was adopted to compare between second language learners groups owing to the convergence of the numbers of participants in these groups. The comparison between the structures was built on paired-samples t-test.

6.2.2 Results of the L2 Arabic study

6.2.2.1 The acquisition of the Arabic basic constructions

Figure 13. The mean responses on the acquisition of Arabic basic constructions
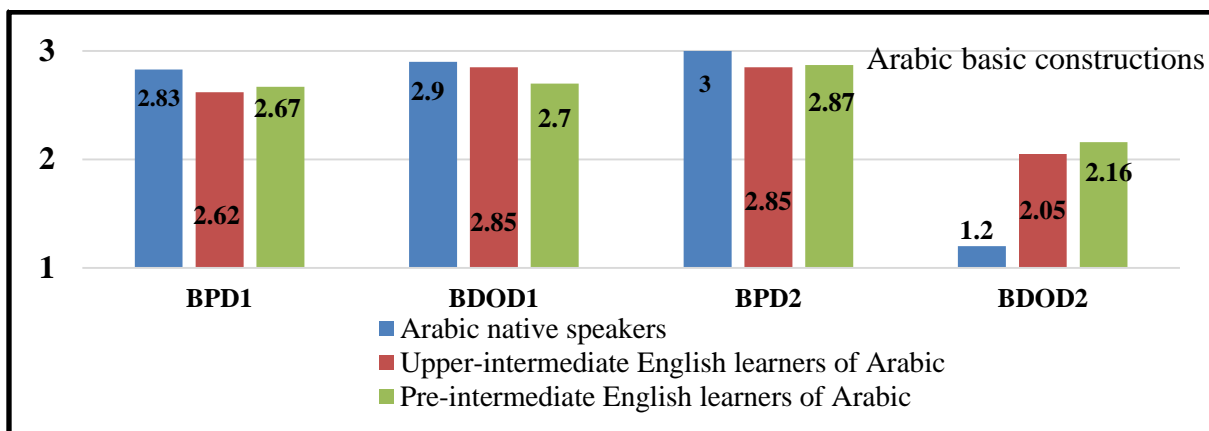
Table 44. Examples of Arabic basic constructions		
The abbreviation of each structure	language	Example
BPD1	Arabic	باعَ سالمٌ السيارةَ لأحمدَ.
	English	Salem sold the car to Ahmed.
BDOD1	Arabic	أعطى أنورُ مجدى الكتابَ.
	English	Anwar gave Majdi the book.
BPD2	Arabic	دفعَ هاني عشرةَ دراهمٍ لسمرَ.
	English	Hani paid ten dirhams to Samar.
BDOD2	Arabic	رمى فايزٌ فوازَ القلمَ.
	English	Fayez threw Fawaz the pen.

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Table 45. Tests of within-subjects effects on Arabic basic structures				
Source	DF	MS	F	Sig.
Structures	1	11.530	69.863	.000
Structures * group	2	1.202	7.281	.002
Verb group	1	7.200	101.876	.000
Verb group * group	2	1.275	18.043	.000
Structures * verb group	1	15.995	182.413	.000
Structures * verb group * group	2	1.080	12.318	.000

In accordance with the three-way mixed ANOVA was run within participant groups (native speakers of Arabic, upper-intermediate learners and pre-intermediate learners of Arabic), as a between-subject variable, and structures (BPD vs. BDOD) and verb groups (group one {give, sell, hand, tell and show} vs. group two {pay, read, write, throw, kick, toss and shoot}) as within-subject variables. The variables revealed significant results, as shown in Table 45. The interaction of all variables showed a significant disparity between the participants $F (12.318) = 1.080$, $p = .000$. This table should be followed up with two-way ANOVA to find out the significant level of each variable. Table 46 illustrates the statistical analysis of the Arabic BPD1 and BDOD1 structures.

Table 46. Tests of within-subjects effects on the Arabic BPD1 and BDOD1 structures				
Source	DF	MS	F	Sig.
Structures	1	.182	1.905	.174
Structures * group	2	.076	.797	.456

As Table 46 shows, no significant difference within structures $F (1.905) = .182$, $p < .174$ nor the interaction of structures and group $F (.797) = .076$, $p = .456$.

Table 47. Tests of within-subjects effects on the Arabic BPD2 and BDOD2 structures				
Source	DF	MS	F	Sig.
Structures	1	27.343	174.109	.000
Structures * group	2	2.205	14.043	.000

A further two-way ANOVA was ran between participant groups (native speakers of Arabic, upper-intermediate learners and pre-intermediate learners of Arabic), within structures (BPD2 vs. BDOD2) revealed that there is a significant disparity not only with structures $F(174.109) = 27.343$, $p = .000$ but also within the interaction between structures and group $F(14.043) = 2.205$, $p = .000$ as illustrated in Table 47. These ANOVA analyses will be followed by T-test analyses to recognise the significant variables.

Table 48. One-way ANOVA on the Arabic BPD2 and BDOD2 structures				
Source	DF	MS	F	Sig.
BPD2	2	.078	1.450	.245
BDOD2	2	3.375	12.831	.000

As Table 48 shows, there is no evidence of the disparity between the participants on the assessment of the BPD2 structure. However, there was a statistical disparity between the participants on the assessment of the BDOD2 structure. These ANOVA analyses are followed by certain t-test analyses to further perceive the significance in assessment of the BDOD2 structure. A significant finding to be noticed is that the experimental participants did accept the BDOD2 structure as a well-formed example of Arabic, which it is not. The predictable acceptance of the BDOD2 structure by the experimental participants shows some degree of variation among the participants which can be observed in the comparison between the native speakers and the upper-intermediate participants, as Table 49 illustrates.

Table 49. Comparison between Arabic native speakers and upper-intermediate English learners of Arabic assessing the BDOD2 structure in Arabic				
Groups of participant	N	Structure	Means	SD
Arabic native speakers	10	**BDOD2**	1.20	.000
Upper-intermediate English learners of Arabic	20		2.05	

Furthermore, there was a disparity in the judgement of this structure between the control group and the pre-intermediate group (1.20 vs. 2.16: p = .000), as observed in Table 50.

Table 50. Comparison between Arabic native speakers and pre-intermediate English learners of Arabic assessing the BDOD2 structure in Arabic				
Groups of participant	N	Structure	Means	SD
Arabic native speakers	10	**BDOD2**	1.20	.000
Pre-intermediate English learners of Arabic	20		2.16	

6.2.2.2 The acquisition of the Arabic scrambling constructions

Figure 14. The mean responses on the acquisition of the Arabic scrambling constructions
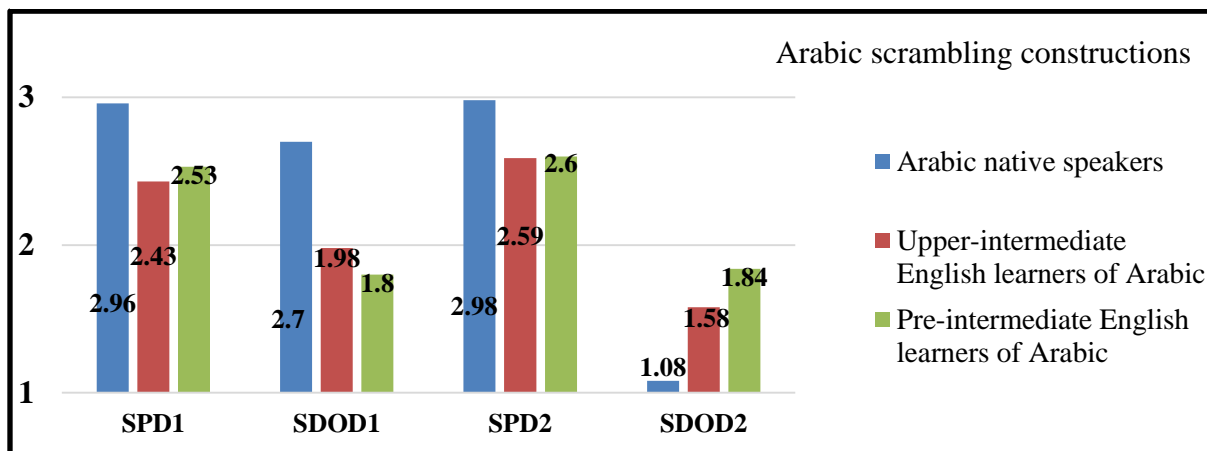
Table 51. Examples of the Arabic scrambling constructions		
The abbreviation of each structure	**language**	**Example**
SPD1	Arabic	باعَ سالمٌ لأحمدَ السيارةَ.
	English	Salem sold to Ahmed the car.
SDOD1	Arabic	أعطى أنورُ الكتابَ مجدى.
	English	Anwar gave the book Majdi.
SPD2	Arabic	دفعَ هاني لسمرَ عشرةَ دراهمٍ.
	English	Hani paid to Samar ten pounds.
SDOD2	Arabic	رمى فايزٌ القلمَ فوازًا.
	English	Fayez threw the pen Fawaz.

Table 52. Tests of within-subjects effects on Arabic scrambling structures				
Source	DF	MS	F	Sig.
Structures	1	11.530	69.863	.000
Structures * group	2	1.202	7.281	.002
Verb group	1	7.200	101.876	.000
Verb group * group	2	1.275	18.043	.000
Structures * verb group	1	15.995	182.413	.000
Structures * verb group * group	2	1.080	12.318	.000

A three-way ANOVA repeated measures, which was ran between participant groups (native speakers of Arabic, upper-intermediate learners and pre-intermediate learners of Arabic), within structures (SPD vs. SDOD) and verb groups (group one {give, sell, hand, tell and show} vs. group two {pay, read, write, throw, kick, toss and shoot}) as within-subject variables, showed that all variables revealed significant disparities, as illustrated in Table 52. The interaction between structures, verb group and group also revealed a significant difference F (17.759) = 2.149, p = .000. However, the interaction between structure and group showed no significant disparity F (1.037) = .470, p = .362. Two-way ANOVA analysis should be run to realise the disparity level of each variable. Table 53 illustrates the statistical analysis of the Arabic SPD1 and SDOD1 structures

Table 53. Tests of within-subjects effects on the Arabic SPD1 and SDOD1 structures				
Source	DF	MS	F	Sig.
Structures	1	5.184	22.054	.000
Structures * group	2	.414	1.760	.183

Table 53 compares between participant groups (native speakers of Arabic, upper-intermediate learners and pre-intermediate learners of Arabic), within structures (SPD1 vs. SDOD1) as within-subject variables. No disparity was found within the combination of structures and group F (1.760) = .414, p = .138, as illustrated in Table 53. Therefore, there is no interaction between

group and structure to analyse any further. Turning to the statistical exploration of the Arabic SPD2 and SDOD2 structures. Table 54 show the analysis of the investigation of the Arabic SPD2 and SDOD2 structures.

Table 54. Tests of within-subjects effects on Arabic SPD2 and SDOD2 structures				
Source	DF	MS	F	Sig.
Structures	1	33.698	99.395	.000
Structures * group	2	2.205	6.504	.003

An additional two-way ANOVA, which compares between participant groups (native speakers of Arabic, upper-intermediate learners and pre-intermediate learners of Arabic), within structures (SPD2 vs. SDOD2), showed a significant disparity not only with structures F (99.395) = 33.698, p = .000, but also within the interaction between structures and group F (6.504) = 2.205, p = .003, as revealed in Table 55. These divergences need to be further explored by one-way ANOVA to realise the value of the interaction.

Table 55. One-way ANOVA on Arabic SPD2 and SDOD2 structures				
Source	DF	MS	F	Sig.
SPD2	2	.596	2.387	.103
SDOD2	2	1.911	6.608	.003

As shown in Table 55, there is no significant disparity between the participants on the assessment of the SPD2, F (2.387) = .596, p = .103. Nevertheless, a significant difference was found in the assessment of the SDOD2 structure, F (6.608) = 1.911, p = .003. The assessment of the SDOD2 structure ought to be further investigated by t-test to identify the significant result. The following two tables show the comparison between the native speakers and the non-native speakers' rating. It is obvious that there is a significant variation between the native speakers group and the experimental groups in the judgement of the SDOD2 structure, as shown respectively in Table 56 and Table 57.

Table 56. Comparison between Arabic native speakers and upper-intermediate English learners of Arabic assessing the SDOD2 structure in Arabic				
Groups of participant	N	Structure	Means	Sig.
The Arabic native speakers	10	SDOD2	1.08	.014
Upper-intermediate English learners of Arabic	20		1.58	

Table 57. Comparison between Arabic native speakers and pre-intermediate English learners of Arabic assessing the SDOD2 structure in Arabic				
Groups of participant	N	Structure	Means	Sig.
Arabic native speakers	10	SDOD2	1.08	.000
Pre-intermediate English learners of Arabic	20		1.84	

To conclude, the statistical investigations showed that the participants varied significantly on the assessments of the BDOD2 and SDOD2 structures due to the disparity between the participants' L1 and L2.

6.3 Discussion of the findings of the L2 Arabic study

6.3.1 Introduction

This section seeks to examine the acquisition of L2 through an investigation of the acquisition of the dative alternation in Arabic. There are three primary questions which should be raised in such an investigation where a partial fit between L1 and L2 occurs. The first question is to what extent L1 has an influence on the acquisition of L2. Second, will English learners of Arabic perceive the overlap between Arabic and English in terms of the morpho-syntactic structure of the dative alternation and transfer the English structures into Arabic? The final question is does

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the acquisition of the new structures in Arabic exclude English structures, or do English learners of Arabic have the ability to allow both constructions in their mental grammars?

The presentation and analysis of the experimental Arabic study results are discussed in this chapter. The findings of this study can generally be summarised by reporting that the English learners of Arabic to some extent realised the grammaticality of the absent structures in their L1. Moreover, they had not yet unlearned the unacceptable structures in their target language.

In this current chapter, the findings of my empirical research are presented on the impact of my research questions and related literature. It begins by outlining the discussion of the main findings of the study related to the acquisition of the Arabic dative alternation by the native speakers of English.

6.3.2 Basic structures

As the superset of the English alternating verbs comparing to their counterparts of Arabic was mentioned and deeply discussed early. A key point in this study is how Arabic verb classes can be mapped onto a variety of argument structures and how the semantic constraints affect the mapping of those argument structures onto different syntactic configurations. As far as this point is concerned, a few questions were highlighted to be answered: one central question was whether or not the English learners of Arabic are fully aware of the ungrammaticality of the BDOD structure with verbs such as the equivalents of 'pay' and 'read' although these examined verbs are semantically in the Give class and the Tell class respectively and the occurrence of these verbs with the DOD structure is admissible in the L1. A further question with respect to the impact of the semantic constraint on expressing certain verb classes into a number of syntactic constructions was to what extent the English learners of Arabic are able to unlearn that the BDOD structure with the Throw class verbs is not grammatical in the L2. To answer these questions, the Arabic BDOD2 structure will be investigated. A learnability consideration based

on White's assumption is that it seems to be difficult for the English learners of Arabic to recognise the ungrammaticality of the BDOD2 structure in their L2. As a consequence of this assumption, these learners would highly accept this structure as a grammatical example of Arabic which it is not. Moreover, the FDH predicts that these learners will accept this ungrammatical structure and cannot overcome the overgeneralisation due to the occurrence of such structure in their L1. The FT/FA approach also hypothesises that these learners will transfer their L1 grammar by accepting such structure till they restructure themselves and acquire the L2 grammar.

It was hypothesised that the English learners of Arabic may face difficulties to come to know the ungrammaticality of the BDOD2 structure in Arabic. It was also anticipated that no significant divergences may well be revealed among the experimental participants' judgments due to the availability of such structure in the L1.

On the question of the semantic influence on structuring certain verb classes into different syntactic structures, it was found that the English learners of Arabic positively judged the BDOD2 structure which is an ungrammatical sentence in the L2. Interestingly, the English learners significantly varied from the native speakers, as Tables 54 and 55 show. This finding was expected and supports the research hypothesis that the English learners would suffer to unlearn the BDOD2 structure since it is available in their L1.

The current expected findings do not match the previous findings found by Oh & Zubizarreta (2006) who investigated the acquisition of the English dative alternation by Japanese and Korean. Due to the subset of the English benefactive morphology comparing to Japanese and Korean, learnability considerations led them to predict that Japanese and Korean learners would not acquire the English benefactive DOD structures whether the grammatical one (*e.g. Ann baked a cake for her children*) or the ungrammatical one (e.g. *Ann finished her children the painting*). It was revealed that L2 English learners rejected the benefactive DOD structure, both grammatical and ungrammatical. Inconsistency between these two findings are that the current

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participants could not realise the ungrammaticality of the BDOD2 structure due to its acceptance in the L1 whereas Japanese and Koran realised the ungrammaticality of certain English benefactive DOD structures despite their grammaticality in their L1.

A further study which revealed contradictory findings was conducted by Baten & De Cuypere (2014). They investigated the acquisition of the German dative alternation by native speakers of Dutch. L2 (German) is subset of its L1 (Dutch) counterpart. Dutch allows both the PD and the DOD structures whereas German only allows the DOD structure. They explored the assessment of the German PD structure by Dutch speakers due to its ungrammaticality in L2. Dutch showed a preference of the DOD structure which implies that these learners have the ability to realise the ungrammaticality of the PD structure in L2. Again Dutch learners of German could perceive the ungrammaticality of the L2 structure whereas the current participants could not do so.

These inconsistent findings revealed in Oh & Zubizarreta (2006) and Baten & De Cuypere (2014) may be due to the high proficiency levels of the participants in these two studies which may assist them to perceive the ungrammaticality of certain L2 structures such as the DOD structure with several *for*-dative verbs like in English as examined by Oh & Zubizarreta (2006) and the German PD structure as in Baten & De Cuypere (2014). The current study might find English learners of Arabic rejecting the BDOD2 structure if high proficiency levels were investigated.

This finding is in agreement with White's (1991) suggestion where L1 is a superset of its L2 counterpart. L2 learners will face difficulty to unlearn a structure that is not grammatical in the L2. This suggests that the English learners of Arabic could not realise the ungrammaticality of the BDOD2 structure in Arabic given the absence of negative evidence which would inform the learners about the ungrammaticality of the BDOD2 structure in Arabic. Without relevant evidence, these learners would be conservative, could not acquire the L2 representation. This suggestion may well be interpreted that the L1 has an effect on the acquisition of the L2. Furthermore, these results confirm the idea of White's (1991) Superset Model in case of the

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superset of L1, L2 learners do struggle to unlearn structures that are not permitted in the L2. Moreover, the current finding provides support to the FT approach transferring the L1 grammar to L2 by positively judging the BDOD2 structure which is not grammatical in the L2 grammar. This result also matches the FDH and the RDH which state that L2 learners cannot overcome overgeneralisation in this domain

This result supports some previous researches which investigated L2 acquisition where the L1 structures form a superset of their counterparts. For example, White (1987, 1991) examined the acquisition of the French dative alternation by English adult learners. English allows the PD and the DOD structures whereas French only permits the PD structure. Her interest was whether English learners recognise the ungrammaticality of the DOD structure in French. Her results in both studies showed that English learners of French accepted the DOD in French which is not grammatical. Moreover, Inagaki (2001) investigated the acquisition of manner of motion verbs with PPs by English learners of Japanese. It was revealed that L2 Japanese learners could not unlearn that manner of motion verbs with PPs as ungrammatical in Japanese.

Additionally, Oh & Zubizarreta (2006) investigated how Japanese, Korean and Mandarin acquire the English dative alternation. Mandarin learners accept all goal DOD structures both the grammatical example (e.g. *Mary gave Peter the book*) and the ungrammatical example (e.g. *Mary explained Peter the answer*) due to the presence of the goal morphology in their L1 and its absence in their L2. The results of the acquisition of the English dative alternation by Mandarin supported by the findings of the assessment of the BDOD2 structure in Arabic by the native speakers of English, since both English and Mandarin learners accepted what are not allowed in their L2.

The current findings also are consistent with data recently obtained by Zeddari (2015). He investigated how native speakers of Moroccan acquire the English dative alternation. He was interested in exploring the acquisition of the dative alternation with certain English verbs such as 'give', 'donate', 'tell', 'whisper', 'throw' and 'push'. L1 (Moroccan) allows the SPD

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structure whereas L2 (English) does not do so. The L1 grammar presents a superset of its L2 counterpart. His results revealed that Moroccan learners of English positively judged the SPD structure in the L2. The current participants and Zeddari's study participants showed a clear acceptance of the ungrammatical structure in their L2.

The possible interpretation of the acceptance of the ungrammatical structure in L2 could be attributed to the L1 transfer which may be caused by the overlap between the L1 and the L2 argument structures. These learners may realise the overlap between their L1 and L2 and indicating that the BDOD2 structure is grammatical in English, therefore, it should be grammatical in Arabic. The acceptance of the ungrammatical BDOD2 structure provides a suggestion that the L2 Arabic learners could not perceive the ungrammaticality of such structure because of the absence of negative evidence. Without relevant evidence, these learners would not acquire the L2 structures.

The results of this question match those observed in earlier studies of White (1991) and Inagaki (2001) which indicated that it is difficult for L2 learners to notice the unacceptability of certain L2 structures when their L1 is a superset of their L2. The question is how the English learners of Arabic can overcome overgeneralisation. Regarding White's (1991) argument, overgeneralisation is more difficult to unlearn owing to the fact that there is no positive evidence to inform L2 learners that their L1 grammar is not possible in the L2. Consequently, in order to enable L2 learners to overcome L1 transfer, in such a case, they must rely on indirect negative evidence by noticing the absence or the infrequency of the unacceptable structures in the L2. Otherwise, direct negative evidence must be provided to inform the learners what is not unacceptable in their L2. (White 1991 and Inagaki 2001). White (1991) suggested that English native speakers should receive negative evidence to assist them to realise the unacceptability of the DOD structure in French when she found that English learners positively judged the French DOD construction and accepted it as a grammatical sentence. Inagaki (2001) also indicated that English learners of Japanese did not receive negative evidence to assist them to unlearn that the manner of motion verbs are not allowable to appear with goal PPs in Japanese. Hence, the

English learners of Arabic ought to be provided with negative evidence which informs them that the BDOD2 structure is ungrammatical in Arabic.

With regard to the acquisition of the BPD structures (e.g., *Salem sold the car to Ahmed* and *Khalid kicked the ball to Talal*) and the BDOD1 structure (e.g., *Hind gave the boy the book*), it was revealed that English speakers accepted these constructions as grammatical. Such findings provide a support for both the FDH and the RDH which state that L2 learners will not have difficulty to learn the structures that are allowed in their L1. Since all these structures are available in the L1 grammar. It may be assumed that the L1 grammar has a positive influence as it facilitates the acquisition of such these structures in the L2.

This study also aimed to identify which structures in the Arabic dative alternation were preferred and easily acquirable by the native speakers of English. It has been argued that the PD structure is learnt straightforwardly by non-native learners (Mazurkewich 1981, 1984, 1985 and Hawkins 1987). Based on these findings, it was expected that all the experimental participants may perhaps firstly acquire the PD structure in Arabic.

With respect to this research question, it was somewhat surprising that the English learners of Arabic acquired the BDOD1 structure (e.g. *Majdi gave Anwar the book*) earlier than the BPD1 structure (e.g. *Majdi gave the book to Anwar*) (2.85 and 2.70 vs. 2.62 and 2.67). These unexpected results do not corroborate the observation of the previous studies in some way which found that the PD construction is acquired early compared to the DOD construction by L2 learners. These results contrast with the earlier studies by Mazurkewich (1981, 1984, 1985) and Hawkins (1987) who revealed that the participants accepted the PD structure earlier than the DOD structure by L2 learners.

An extra study revealed that the PD structure acquired before the DOD structure was conducted by Mykhaylyk et al. (2013). They found that children preferred the PD structure. They stated that processing difficulties, complexity of the syntactic structure or pronominality could be a

possible interpretation for the dispreference for the DOD structure in the acquisition of the English dative alternation as in L1. Moreover, Anderssen et al. (2014) revealed that children preferred the PD structure to the DOD structure as the basic word order in various discourse contexts. De Cuypere et al (2014) also found a subtle preference for the use of the PD structure and this subtle preference was attributed to the language acquisition process as suggested by the PT. Moreover, Jäschke & Plag (2015) revealed that the PD construction was slightly preferred by the participants.

The current finding is rather contradictory to the previous findings as the BDOD1 structure is preferred to the BPD1 structure. However, they all provide evidence to support the claim that the unmarked structure is acquirable earlier than the marked structure, as the learners in this study showed preference to the BDOD1 structure even though the BPD1 structure is more popular in their L1 grammar. This rather contradictory result could be due to the fact that the Arabic BDOD1 structure is the unmarked structure which is easily acquired in the early exposure to Arabic whereas the BPD1 structure is less frequent compared to the BDOD1 structure since the native speakers accepted the BDOD1 structure more than the BPD1 structure with alternating verbs. It may be also evidence of the idea of the language acquisition process as offered by the PT which implies that structures which are easier or easiest to process, will be acquired earlier than structures which are harder to process despite the convergences between the L1 and the L2. Another possible explanation for this is that these learners acquire their Arabic by attending certain Arabic courses to explicitly learn some L2 grammar and the alternating verbs are included in the textbook. It is also due to the subgroup of the PD structure and the limited numbers of the dative verbs, the majority of Arabic grammar textbooks concentrate on the DOD structure in the dative alternation lessons more than the PD structure. Such concentration may lead these learners to draw a deep attention on the DOD structure more than the PD structure with alternating verbs.

Moreover, this preference may be due to the availability of both structures in the L1. The preference of the BDOD1 structure over the BPD1 structure could possibly be a lack of L1

transfer as the BPD1 structure is preferred in L1. The lack of L1 influence in this study might be due to the methodology used to collect the data (*written judgment test* by *pre-intermediate and upper-intermediate learners of Arabic*). First, the finding could possibly be due to the low proficiency level of L2 learners. It may be attributed to the late acquisition of the dative alternation. Including more advanced English learners of Arabic may perhaps make the transfer more obvious. Second, the data for this study were only gathered by a written test. Results may differ, if another test such as actual, oral in the acquisition of the Arabic dative alternation by native speakers of Arabic.

An additional comparison regards the assessment of the BPD2 (e.g. *Hani read the report to Nasser*) and the BDOD2 (e.g. *Hani read Nasser the report*) structures. It was revealed that even though the BDOD structure is unmarked than the BPD structure in the formal sense of structural markedness, since the BDOD2 structure is actually ungrammatical in Arabic, the results showed that L2 learners were aware of the ungrammaticality as they rated the BDOD2 structure lower than the BPD2 structure; and they rated the BPD2 structure as clearly grammatical (2.85/2.78).

6.3.3 Scrambling structures

A way of illustrating the divergence of the dative structures between Arabic and English is the allowance of the SD structures in Arabic but not in English. In such a case Arabic (L2) is more flexible than English (L1). Therefore, the L2 Arabic experimental study sought to investigate the awareness of English learners of the Arabic SD structures. The question raised in such investigation is the extent to which are English learners of Arabic fully aware of the acceptability of the Arabic SDOD1 structure (e.g. *Ahmed handed the paper Ali)*.

The assumptions of acquiring such structure are as follows. The FDH and the RDH assume that these learners will not be able to acquire such a structure given its absence in the L1. The FT/FA approach argues that L2 Arabic learners will initially transfer their L1 grammar by rejecting the

grammatical construction until they restructure themselves and acquire the L2 representation. White (1991) provided unambiguous assumptions when L1 grammar presents a superset of its counterpart in the L2. L2 learners will possibly acquire this structure once the efficient positive evidence is provided. Otherwise, they will not notice the use of the L2 grammar.

It was anticipated that the L2 Arabic learners will acquire the SDOD1 structure especially those who were at the upper-intermediate level owing to the availability of positive evidence. It is also predicted that the upper-intermediate participants would perform better than the pre-intermediate participants due to their high proficiency level in the L2 grammar.

According to this empirical data, it was revealed that English learners at the upper-intermediate level did accept the Arabic SDOD1 structure as good in Arabic. Their rates were lower than the native speakers' rate (2.70 vs.1.98). Furthermore, those who were at the pre-intermediate level statistically could not realise the grammaticality of the SDOD1 structure. No significant disparity between the assessment of the experimental groups and the native speakers' assessment on this structure was revealed as in Table 53. These results may be explained by the fact that these learners notice the overlap between the L1 grammar (English) and the L2 grammar (Arabic) and assuming that these languages are to a great extent the same if not identical. Consequently, the SDOD1 structure should be unacceptable in both English and Arabic. These findings support the hypothesis of this thesis which was that the English learners of Arabic could acquire the SDOD1 structure even though such structure is not allowed in their L1. However, this result is not in accord with the idea of Adjémian (1983), who indicated that L2 learners will be too conservative and fail to incorporate L2 properties that are not allowed in their L1 grammar. Furthermore, such finding is not in line with the FDH and the RDH as these learners did not acquire this structure due to its absence in the L1 grammar. It could be a contribution to the FT approach as L2 learners accepted this structure despite its absence in their L1 grammar. These learners will gain better understanding of the extension of the Arabic structures once they possess a higher proficiency level and expose more to Arabic grammar. It

might be suggested that these learners would be able to learn this structure once sufficient positive evidence on such construction is available to them.

A supplementary investigative point was that whether these learners can realise that the SPD constructions (e.g. *Talal handed to Yousef the paper* and *Fayez tossed to Tariq the newspaper*) are allowable in their L2 even though such constructions are not allowed in the L1. The acquisition of such structures based on the FDH and the RDH will be difficult due to their absence in the L1. However, based on White's (1991) assumption, the acquisition of the Arabic SPD structures by the English speakers may be not very obvious due to the superset of the L2 grammar. The Arabic L2 learners may notice the use of the L2 grammar once the effective positive evidence is provided. Otherwise, they will not realise the grammaticality of these structures in the L2. The FT/FA approach predicts that L2 learners will initially rely on the L1 grammar and ignore the L2 structure until the input cannot be analysed based on the L1 grammar then these learners will restructure themselves and acquire L2 structure.

The hypothesis of this point was that if these learners interpret the partial fit between the languages in question as they are identical, these learners would be more conservative by ignoring such structures given their ungrammaticality in the L1. Nevertheless, if the L2 learners appreciate the L2 input which is not compatible in certain ways to the L1 data, they will be more productive by positively judging all the SPD structures. It was predicted that English learners of Arabic may well not find any difficulties in acquiring the native-like expression of the SPD structures, at least the upper-intermediate participants, because of their high proficiency level in the L2. Furthermore, it would be almost certain to find a slight difference between the participants of various proficiency levels regarding the assessment of the SPD structures due to divergence of the proficiency levels of the participants.

It was found that the English learners of Arabic accepted the SPD structures. The finding showed no differences between the English participants. This finding was predictable and suggests that the participants had the ability to learn the SPD constructions which do not exist in their L1

since such constructions are found and available in the L2 input. These learners may then perceive the use of the SPD structures, assisting them to obtain a wide understanding of the Arabic representation. Although the English learners did not accept these structures as high as the native speakers of Arabic did. It is likely for the English learners of Arabic to reach a higher rating for such structures when they possess greater proficiency in their L2, owing to the increased exposure these learners will receive. The findings of the acquisition of the SPD structures in Arabic are in accord with the idea indicating that L2 learners can learn structures that do not exist in their L1. On the other hand, these findings do not support the FDH and the RDH which propose that these learners will not be able to learn the SPD structures due to their absence in the L1.

The acquisition of SD structures by the current L2 Arabic learners despite their ungrammaticality in the L1 are not in the line with certain previous studies. For instance, Montrul (2002) found that Turkish and Spanish learners of English could not perceive the acceptability of a sentence such as *The captain marched the soldiers to the tent* and these participants did not acquire the transitivity alternation with 'march'. Furthermore, Inagaki (2002) investigated the awareness of Japanese learners on the flexibility of the English ambiguous prepositions (e.g. 'under') to express both directional and locational readings. He found that Japanese learners of English could not perceive the acceptability of the directional reading with the ambiguous prepositions due to the absence of such reading in their L1 grammar. Moreover, Zeddari (2015) found that pre-intermediate learners could not realise the grammaticality of the English DOD structure with verbs such as 'give', 'tell' and 'throw' due to their absence in the L1 (Moroccan). The participants in these three studies did not acquire what is absent in their L1 whereas the current participants did so.

These findings are not consistent with the current findings, may be owing to certain possibilities. One is that the proficiency level of the participants could highly affect the investigation of the acquisition of L2 as the high proficiency participants perform better than those at the low

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proficiency level. It also could be attributed to the frequency of certain linguistic phenomena. Such possibilities could play a significant role in the assessment of the L2 grammar.

The results of the acquisition of the SD structures seem to be consistent with some of the previous studies. An example of these studies was conducted by Mazurkewich (1984) who found that French learners acquire the DOD structure in English despite its ungrammaticality in their L1.

It also does support the finding of Inagaki (2001) who investigated how Japanese learners at the intermediate level acquire the manner of motion verbs with PPs expressing a goal in English such structure as *John walked to school*. The result showed that these learners acquired such a structure which is absent in their L1. Inagaki (2001: 164) summarised his results by indicating that:

> 'Intermediate Japanese learners of English did not have difficulty recognizing the
> grammaticality of manner of motion verbs with goal PPs due to the availability
> of positive evidence.'

He suggested that Japanese learners of English could learn such a structure which does not exist in their L1 as it is available in the L2 input. Such availability helped them to add the new structure to their interlanguage and acquire the L2 representation. Moreover, Zeddari (2015) found that L2 English learners at intermediate and advanced levels could realise the grammaticality of the DOD structure with the investigated alternating verbs 'give', 'tell' and 'throw'. The participants in these studies could acquire what is ungrammatical in their L1. However, the pre-intermediate English learners of Arabic could not acquire the Arabic SDOD1 structure due to its absence in the L1 grammar.

What may seem from the interpretation of such a result when the L2 is a superset of L1 argument structures is that positive evidence should usually be sufficient to assist L2 learners to broaden

their interlanguage grammar. Positive evidence must be consistent, frequent, and clear to L2 learners to appreciate and understand it accurately. It is likely that positive evidence can be clear, but not frequent, or very frequent, but not clear or misleading in its meaning. Consequently, positive evidence must be both clear and frequent for it to be effective in assisting L2 learners to overcome the impact of the L1 and comprehend L2 grammar.

The key point to highlight here is that the English learners of Arabic ultimately recover from the issue of undergeneralisation. White (1991) argued that it is easier to overcome the issue of undergeneralisation in the acquisition of L2 argument structures more than the issue of overgeneralisation. Initially, once the L2 learners assume a restrictive grammar, L2 positive evidence will probably draw their attention to the extension of L2 grammar. Once the English learners of Arabic at the pre-intermediate perceive the grammaticality of sentences such as *Ali gave the book Mohammed* in Arabic, they will restructure their grammar to incorporate the Arabic SDOD1 structure which is not allowed in their L1.

An additional interesting question is that which SD constructions, the SPD1 or the SDOD1 would be firstly learnt by the English participants. According to the literature, the unmarked structure in the L2 is acquired earlier than the marked structure. It was expected that the English participants would learn the SPD construction before the SDOD1 construction owing to its unmarkedness and processability.

With respect to this question, it was found that the SPD1 structure (e.g. *Talal handed to Yousef the paper*) was positively judged by these participants more than the SDOD1 structure (e.g. *Talal handed the paper Yousef*) (2.43 vs. 2.53 and 1.98 vs. 1.80). This result provides evidence for the idea that the PD structure is learnt prior to the DOD structure. A likely explanation for the current finding could be that the SPD1 was preferable to L2 Arabic leaners given its relative acceptability among the native speakers themselves (2.96 vs. 2.70).

6.3.4 Summary

This empirical study seeks to examine L1 impact on the acquisition of L2 argument structures by exploring the acquisition of the Arabic dative structures by the native speakers of English in two situations: (1) the L2 (Arabic) dative structures form a superset of its L1 (English) counterparts; (2) the L2 (Arabic) structures form a subset of its L1 (English) counterparts.

The dative alternation is permitted in both English and Arabic; nevertheless, there are some differences between them. One is that the BDOD2 construction is grammatically acceptable in English but not in Arabic. The investigation of the assessment of this construction in Arabic by the native speakers of English illustrates the first circumstance which is the L1 constructions are superset of L2. It was predicted that the English learners of Arabic would struggle to notice and learn the ungrammaticality of the BDOD2 structure in the L2. As predicted, these learners judged the BDOD2 structure as a grammatical example which it is not. A possible explanation for this might be that these learners were misled by the partial fit between the L1 and the L2 grammars. Such learners need to be provided with negative evidence to assist them to unlearn such examples.

Other important finding concerns the acquisition of certain structures that are presented in the experimental participants' L1 such as the BPD1, BPD2 and BDOD1 constructions. As expected, the current L2 learners accepted these structures. These findings confirm the idea that L2 learners can only learn what is presented in their L1.

One unanticipated finding was that the L2 Arabic learners acquire the BDOD1 structure earlier than the BPD1 structure. It is contrary to expectations of certain previous researchers such as Mazurkewich whose finding was that the PD structure is learnt early by L2 English learners due to the unmarkedness of the English PD construction. According to the current data, it is potential to infer that the Arabic BDOD1 structure is the unmarked and the BPD1 structure is the marked.

The other difference between English and Arabic is that the SD constructions are only accepted in Arabic. With respect to this disparity, it was investigated to what extent the current L2 Arabic learners are well aware of the acceptability of the SPD constructions in the L2. It was predicted that these learners would not face any difficulties to learn these constructions due to the availability of positive evidence to them on these structures. It is also predicted that L2 learners at the upper-intermediate level would perform better than the pre-intermediate participants. The result supports the expectation that the SPD constructions would be easily acquired by the L2 Arabic learners. This suggests that the L2 Arabic learners were capable of acquiring these structures which are absent in their L1 since they can be found and are available in the L2 input.

A further question regarding the acquisition of the SD constructions is that can the current L2 learners of Arabic perceive the grammaticality of the SDOD1 in the L2? The prediction was that these learners would easily acquire this structure owing to the availability of positive evidence. Moreover, this structure would be accepted by the upper-intermediate participants more than the pre-intermediate participants. The data revealed that the experimental participants did notice the grammaticality of the SDOD1 structure in the L2. This finding confirms the idea that L2 learners will be able to learn L2 structures that do not present in their L1 grammar.

Chapter 7 Conclusion

7.1 Introduction

The primary aim of this chapter is to offer a conclusion for the bidirectional study. This chapter has four sections, including a summary of the main theoretical background and the phenomenon of the acquisition of L2 argument structure. The findings of the two experimental studies: the acquisition of the English dative alternation by native speakers of Arabic, and the acquisition of the Arabic dative alternation by English native speakers will be then drawn followed by a general discussion to explore the influence of L1 on the acquisition of L2. Finally, limitations and suggestions for further research are presented.

7.2 Summary of the main theoretical background

The dative alternation is allowed in both English and Arabic with certain divergences between them. The English dative verbs that can occur in the DOD structure are superset of their counterparts in Arabic. English allows a large number of verbs to occur in the DOD construction whereas Arabic only allows some verbs to alternate. The dative verbs under examination are 12 which belong to three different verb classes. 'Give', 'sell', 'hand' and 'pay' belong to the act of giving class. 'Tell', 'show', 'read' and 'write' belong to the type of communication class. 'Throw', 'kick', 'toss' and 'shoot' belong to the ballistic motion class. These dative verbs all are allowed to occur in the DOD structure in English while only five of them ('give', 'sell', 'hand', 'tell' and 'show') are allowed to alternate in Arabic. The occurrences of these English verbs in the DOD structure are due to the applicability to certain conditions. First, these verbs not only meet the condition of the BRRs but also belong to the alternating verb classes that are proposed to alternate as suggested by Pinker (1989). Second, the Goal argument should be animate in the DOD structure.

However, the Arabic alternating verbs are permitted to alternate as they are applicable to the nation of the simultaneous participation in the action between the Agent and the Goal argument and the animacy of the Goal argument. The superset of English dative verbs relative to their Arabic counterparts represents the first divergence.

The second divergence is the flexibility of the Arabic dative structures. English and Arabic both allow the basic dative structures, as exemplified in the following examples:

(138) a. Susan sold her car to Ben.
       b. Susan sold Ben her car.

(139) a. باعَ أحمدُ السيارةَ لخالِدٍ

ba'a	ahmed-u	assyiart-a	li	khalid-in
sold	Ahmed-Nom	the car-Acc	prep	Khalid-Gen

'Ahmed sold the car to Khalid.'

b. باعَ أحمدُ خالدًا السيارةَ

ba'a	ahmed-u	khalid-an	assyiart-a
sold	Ahmed-Nom	Khalid-Acc	the car-Acc

'Ahmed sold Khalid the car.'

However, English, on one hand, does not allow the PP to precede the NP in the PD structure. Moreover, English also does not permit the direct object to precede the indirect object in the DOD structure. This means that the SD constructions are ungrammatical, as shown in (140):

(140) a. *Catherine showed to Ann the picture.
       b. *Catherine showed the picture Ann.

Arabic, on the other hand, has optional word orders. It is possible for the PP to precede the NP in the Arabic PD structure and the direct object can precede the indirect object in the DOD structure. This means that the SD structures are grammatical, as illustrated in (141):

(141) a. أعطى أحمدُ لعلي السيارةَ

a'ta	ahmed-u	il	ali-in	assyiart-a
gave	Ahmed-Nom	prep	Ali-Gen	the car-Acc

'Ahmed gave to Ali the car.'

b. أعطى أحمدُ السيارة عليًا

a'ta	ahmed-u	assyiart-a	ali-an
gave	Ahmed-Nom	the car-Acc	Ali-Acc

'Ahmed gave to Ali the car.'

Moreover, the SD structures are compulsory in three circumstances. The first situation is when the Goal argument is expressed after an exceptive phrase, as exemplified in (67). It is obligatory to use the SPD when the Theme argument has a resumptive pronoun co-referential to the Goal argument, as shown in (68a). The SDOD structure must be utilised when the Goal argument has a resumptive pronoun co-referential to the Theme argument as in (68b). The final case is when the Goal argument is a lexical NP and the Theme argument is a pronoun, as shown in (69). These cases of obligatory used of the SD structures are previously discussed and exemplified in section 2.4.1 which is about syntactic features in the Arabic dative structures. The flexibility of the Arabic word orders presents the second divergence between English and Arabic dative structures.

These two divergences show that there is a partial overlap between these languages. Such a partial fit may misguide Arab learners of English and English learners of Arabic to assume that English and Arabic are identical, hence, they may judge L2 structures based on L1 grammar which sometimes is not identical.

7.3 Summary of the phenomenon of the acquisition of L2 argument structure

The bidirectional study explored certain theoretical concerns which are associated with the acquisition of L2; these are the phenomena of transfer, positive and negative evidence. It is a widely held view by L2 acquisition researchers such as Schwartz & Sprouse (1996) that the initial state of the L2 acquisition is the L1grammar. Moreover, some researchers such as Lefebvre, White & Jourdan (2006) argued that the L1 influence will remain even with advanced L2 learners unless they are provided with positive evidence to enable them to develop their language.

It was argued that L1 transfer will possibly be triggered by a partial fit between the L1 and the L2 argument structures (Adjémian 1983; White 1991; Inagaki 2001), and this is very interesting for the current study due to the fact that there is indeed a significant partial fit between the Arabic and English dative structures, as previously discussed. Any learner acquiring L2 has to be provided with positive evidence so as to reach a high level of proficiency in the target language; however, certain constructions will not be acquired without providing L2 learners with negative evidence, which is information about the ungrammaticality of some structures.

The collected data from the bidirectional study were discussed based on four hypotheses: the FDH, the RDH, the Subset-Superset Model, the FT/ FA approach and the FRH. The FDH assumes that L2 learners cannot access UG. Therefore, those who start acquiring L2 during adulthood can only access the principles of UG which are present in their L1. Second, the RDH assumes that L2 learners cannot acquire functional categorises or features that are not allowed in the L1, suggesting fossilisation. It also predicts that the underlying representation of the L2 ultimately maintained is not native-like due to a deficit relating to L1 transfer and the partial access to UG.

The third hypothesis is formulated by White (1991) in which she suggested two circumstances. One is that L2 learners may face difficulty when their L1 grammar is a superset of their L2

grammar. The second circumstance arises when the L2 argument structure forms a superset of the counterpart in the L1. This led to two possibilities being put forward by White (1991). One is that the slight similarity between L1 and L2 will possibly cause L2 learners to speculate that their L1 and L2 are, to a great extent, identical. Therefore, they will fail to notice the use of L2 forms given that they do not occur in L1 (Adjémian 1983). The second possibility is that L2 learners may be able to realise the occurrence of certain L2 constructions that do not exist in their L1 and hence can acquire the L2 grammar due to positive evidence presented to them. The next hypothesis is the FT/FA approach which claims that the initial stage of the acquisition of L2 is the final stage of the L1 grammar and L2 learners will transfer their L1 representations to the L2 grammar (FT). This means that the initial stage of L2 is divergent from the initial stage of L1. Later, L2 learners will have to restructure their interlanguage and resort to principles and operation constrained by UG once the input cannot be analysed by the L1 grammar (FA). The final hypothesis is the FRH which argues that successful L2 acquisition proceeds by means of reassembling sets of lexical features which are drawn from the L1 lexicon into feature bundles appropriate to the L2.

7.4 Summary of the findings
7.4.1 The findings of the L2 English study

The experimental participants could accept all the English structures where their counterparts are available in Arabic. This can be illustrated firstly in the judgement of the BPD constructions. There was a high acceptability of the BPD1 structure (e.g. *Campbell handed the pen to his classmate*) and the BPD2 structure (e.g. *Timor wrote a letter to his wife*). The Arab learners of English positively judged the BDOD1 structure (e.g. *Campbell handed his class mate the pen*). The positive judgement of this structure was not a challenge for the participants due to its availability in the L1 grammar and the sufficient positive evidence.

Nevertheless, the Arab learners could not acquire the L2 structures that are not allowed in their L1. This can be observed in the assessment of the BDOD2 structure (e.g. *Timor wrote his wife a letter*). All experimental participants did not assess this structure as positively as it should be. Both groups, the pre-intermediate and the upper-intermediate, revealed significant results when their judgements of the BDOD2 structure compared to the English native speakers' judgements, as tables 33 and 34 show in Chapter 5.

In terms of the judgements of the structures that are ungrammatical in L2, overall the experimental participants, to some extent, realise that certain L1 constructions are ungrammatical in the L2 grammar. Arab learners of English realized the ungrammaticality of both the SPD1 structure (e.g. *Sam gave to her son the pen*) and the SDOD1 structure (e.g. *Sam gave the pen her son*) as no significant disparity between them and the native speakers of English, as Table 37 shows. A challenge can be obviously perceived in the judgements of the SPD2 structure (e.g. *Julia read to her husband the story*), as Arab learners could not realise the ungrammaticality of this structure. A significant difference was found between the non-native speakers and the native speakers, as tables 40 and 41 reveal.

7.4.2 The findings of the L2 Arabic study

The summary of the findings of the L2 Arabic study will begin with the judgement of the structures are not allowed in the L1 of the experimental participants. These are the judgements of the SD structures. The English learners of Arabic accepted the SPD1 structure, the SPD2 structure and the SDOD1 structure. The statistical comparison between the upper-intermediate participants and the native speakers showed no significant disparity between them in the judgements of these structures.

Secondly, I discuss the judgement of the L2 ungrammatical structures where their counterparts in the L1 grammar are acceptable. This is the judgement of the BDOD2 structure. All the

experimental participants could not correctly reject this structure and their judgements were significantly different from Arabic native speakers, as Tables 49 and 50 in chapter 6 show.

Finally, the judgement of the structures that exist in both languages: the instances of these judgements are the assessments of the BPD1 structure, the BPD2 structure and the BDOD structure. These structures were positively judged by all experimental participants and no significant differences between the experimental participants and the Arabic native speakers could be observed. The SDOD2 structure was treated as unacceptable by all the participant groups due to its ungrammaticality in both languages.

7.4.3 The correlation of findings between the experimental studies

To correlate the findings of the two experimental studies, this section is divided into three parts. The first part reviews the findings when the L2 grammar is a superset of its counterpart in the L1 grammar. The second section then will go on to consider the findings when the L1 grammar is a superset of its counterpart in the L2 grammar.

Firstly, I look at the judgements of the L2 grammatical structures that are not allowed in the L1 of the participants. The experimental participants, to some extent, showed their awareness of the grammaticality of certain structures which do not exist in their L1 grammar. The Arab learners of English at both levels did not accept the BDOD2 structure in their L2. However, English learners of Arabic did accept the SDOD1 structure in their L2. Moreover, the English learners of Arabic at both levels could accept the SPD1 structure and the SPD2 structure despite their unacceptability in their L1. The failure of the acquisition of the DOD structure which is not available in the L1 grammar may be due to the absence of the sufficient positive evidence. The grammaticality of the English heavy NP shift as found by Wasow & Arnold (2003) may possibly consider a justification of the acceptance of the Arabic SPD structures by native speakers of English. This point should be investigated in further research.

Secondly, the judgement of the L2 ungrammatical structures that are allowed in the L1 of the participants. English learners of Arabic at both levels could not perceive the ungrammaticality of the BDOD2 structure in their L2. Moreover, Arab learners of English could not unlearn that the SPD2 structure is not grammatical in their L2. However, Arab learners of English were able to perceive the ungrammaticality of both the SDOD1 structure and the SPD1 structure.

Finally, it is the assessments of the structures that are allowed in both L1 and L2. The experimental participants in the current bidirectional study highly accepted the BPD structures and the BDOD1 structure. The L1 influence may facilitate such an acceptancy.

The findings of the bidirectional study will be discussed based on the four hypotheses: the FDH, the RDH, the Subset-Superset Model, the FT/ FA approach and the FRH.

7.5 General discussions

This section reviews the results of the bidirectional study, aiming to provide an overview of the extent of the influence of L1 on the acquisition of L2 and such influence can be overcome by the sufficient positive or negative evidence.

First, the acquisition of constructions that are possible in the L1 and the L2 can be addressed by investigating the acquisition of the BPD1 construction (*e.g. Ian showed the picture to Ben*), the BPD2 construction (e.g. *John tossed the newspaper to Ann*) and the BDOD1 construction (*e.g. Ian showed Ben the picture*). All the experimental participants accepted these structures in their L2. What is interesting to note is that the Arab learners of English acquired the BPD1 construction earlier than the BDOD1 construction. However, the English learners of Arabic acquired the BDOD1 construction earlier than the BPD1 construction. This difference may be

due to the unmarkedness of each construction in the L2. The BPD1 construction is the unmarked construction in English while the BDOD1 construction is the unmarked construction in Arabic.

Moreover, the BPD2 is acquired before the BDOD2 construction by all L2 learners. The observed correlation between the L2 English learners and the L2 Arabic learners regarding the early acquisition of the BPD2 construction which might be explained in this way: the L2 English learners early acquired this construction due to its unmarkedness whereas L2 Arabic learners acquired it due the ungrammaticality of the BDOD2 in the L2 grammar.

Second, the investigation of the acquisition of constructions that are only allowed in the L2 can firstly be illustrated by investigating the acquisition of the BDOD2 construction (e.g. *John tossed Ann the newspaper*) in English. This structure is only allowed in English which is the L2. The Arab learners of English were not fully aware of the grammaticality of this structure in the L2. The second investigation of the acquisition of constructions that are only allowed in the L2 can be also observed in the acquisition of the SDOD1 construction (e.g. *Ahmed sold the car Salem*) in Arabic by the native speakers of English. It was shown that L2 Arabic learners could learn this construction given that the clear and frequent positive evidence was found and available to them for this structure.

The third investigation of the acquisition of constructions that are only allowed in the L2 is the examination of the acquisition of the SPD constructions (e.g. *the old man told to the child the story* and *Anwar wrote to Dalal a letter*). The results showed that the English learners of Arabic judged these structures as grammatical sentences; such structures were acquired given that they were available in the L2 input.

Finally, the examination of the unlearning of constructions that do not exist in the L2 can be observed by looking at the exploring of L2 learners' judgments on the SD structures in English by the native speakers of Arabic. These learners generally treated the English SD structures as ill-formed sentences. Another way to explore this phenomenon is to perceive how the Arabic

BDOD2 structure was judged by the native speakers of English. It was revealed that the BDOD2 structure was accepted as a grammatical sentence in Arabic which it is not. The findings of investigating the unlearning of the ungrammaticality of some L2 structures generally showed that the experimental participants in both studies accepted the L2 ungrammatical structures. It seems that these results could possibly be due to the overlap between English and Arabic which may mislead their L2 learners to judge the L2 structures based on the L1 grammar and accept the L1 structures which are sometimes not grammatical in the L2. This overgeneralisation might be overcome by providing these L2 learners with negative evidence to inform them that some L1 constructions are not allowed in the L2 grammar. It is noteworthy that this bidirectional study could potentially confirm that the acquisition of L2 may not be so much of a challenge when the L2 grammar is a superset of the L1 grammar as it was found that English learners of Arabic at both levels, the upper-intermediate and the pre-intermediate, acquired the SD structures. These structures were learned although they do not exist in the participants' L1. However, it may be a challenge for L2 learners to acquire the target language when the L2 grammar is a subset of the L1 grammar as it was found that the L2 learners in the bidirectional study could not generally realise the ungrammaticality of some L2 structures.

According to the findings of these studies, it may be suggested that not all grammatical constructions in the L2 are difficult to acquire for the pre-intermediate and the upper-intermediate learners. It was shown that the L2 English learners accepted the SPD2 constructions due to their grammaticality in the L1 (Arabic) and they struggled to acquire the BDOD2 structure since is impossible in the L1 grammar. Moreover, the L2 Arabic learners were able to perceive the grammaticality of the SD structures in their L2 despite their absence in the L1. In addition, they treated the BDOD2 structure in the L2 as well-formed which it is not. These correlated findings of the bidirectional study may partly be explained by the partial fit between the L1 and the L2 which triggers these learners to transfer their L1 grammar to their L2. These results could be also explained by the absence of the relevant evidence to guide these L2 learners to attain the L2 grammar. The acquisition of the SD structures by English learners

of Arabic can possibly be attributed to the clear and effective positive evidence being available to them.

These results confirm the vital role of the L1 in the acquisition of L2. Lefebvre, White & Jourdan (2006) observed that the L1 transfer is the appropriate analysis until contrary evidence is provided to L2 learners. In case of the absence of such evidence, the influence of L1 will continue till the L2 advanced level. Moreover, according to White's (1991) assumption, it is possible for these L2 learners to ultimately overcome the problem of L1 transfer and acquire the L2 grammar, once sufficient positive evidence is provided. Furthermore, the FT/FA approach assume that L2 learners will eventually access to UG and acquire the L2 grammar. On the other hand, hypotheses such as the FDH and the RDH propose that L2 learners are only able to learn what is presented in their L1 and that the acquisition of certain structures is impossible after a critical period, even though positive evidence is accessible. Thus, L2 learners would never tackle overgeneralisation or undergeneralisation errors and would not gain full acquisition of L2 structures.

To accurately discuss the possibility of the full acquisition of the dative alternation in English and Arabic by L2 adult learners after the critical period, the advanced leaners should be examined as Sorace (1993) did in the acquisition of unaccusativity in Italian. Regardless of the participants' levels, it was probable to notice certain individual differences at each level. Individual findings showed that certain L2 learners seemed to be entirely influenced by their L1 whereas other learners started to incorporate the L2 grammar by accepting the grammatical sentences and ignoring the ungrammatical sentences.

There are two likely justifications for choosing L2 learners who were at the pre-intermediate level and the upper-intermediate level to investigate the acquisition of the dative alternation in English and Arabic. One justification is that Inagaki (2002) suggested that L2 learners of pre-intermediate and upper-intermediate levels may well find some aspects of L2 easy to learn, as well as other elements difficult. As a consequence, such an investigation might assist researchers

and teachers to identify exactly where the difficulty in learning L2 grammar is, as well as where the simplicity and ease in learning L2 grammar arises, and provides empirical support for the current predictions. The current prediction for the L2 English study, there are two cases: (1) L1 is a superset of the L2; in such a case, Arab learners of English might face difficulties to restructure from the SD structures due to the allowance of these structures in Arabic. (2) L1 is a subset of the L2; in such a case, there are two possibilities: one is that L2 learners may be able to notice the use of the BDOD2 structure in the L2 and would not struggle to acquire the BDOD2 structure on the basis of positive evidence. The second is that they would not acquire this structure due to the assumption that L1 and L2 are identical and therefore this structure is not allowed in either of them.

The current prediction for the L2 Arabic study, there are two cases: (1) L1 is a superset of the L2, so the English learners would still express the BDOD2 structure and have difficulty to unlearn this structure. (2) L1 is a subset of the L2; in such a case, there are two possibilities: first, the English learners would not be able to acquire what does not exist in their L1 such as the SD structures due to the overlap between the L1 and L2, which may mislead them to assume that these languages are the same and that SD structures are not allowed in Arabic as in English. Second, they could acquire the SD structures once they realise their grammaticality in Arabic.

The second justification was given by White, cited in Inagaki (2002). White argued that involving more advanced learners in a study would not necessarily assist a researcher to interpret the effect of positive evidence given that advanced learners cannot be presumed to possess more relevant input, as evidence would need to support this assumption. Several researchers including White (1991) and Trahey & White (1993) stated that one prospective solution to properly ascertain the impact of positive evidence is to intentionally provide L2 learners with the relevant positive evidence in one structure or another, and test the effect it has on their learning and understanding of L2. Such a scenario would assist to identify the required positive evidence as to enable L2 learners to acquire relatively rare and difficult properties within an L2.

7.6 Limitations and further research

Although it has been assumed that the failure of rejecting the L2 ungrammatical structures and the failure of accepting the L2 argument structures in case of mismatch with the L1 argument structures are caused by the influence of L1. It may be also possible to assume the absence of the required evidence as well. In the L2 English study, another group of participants who are at the same proficiency levels as the current Arab participants and whose L1 grammar is similar to English such as Chinese could be added to confirm the L1 transfer. Moreover, in the L2 Arabic study, a group of participants who are at the same proficiency levels as the current English participants and whose L1 grammar is similar to Arabic should be investigated to confirm the L1 transfer. If the added groups in both studies perform similarly to the current participants in the relevant investigation, the L1 influences are confirmed. However, if the added groups perform better than the current groups, the lack of required evidence alone can account for the current results. Frequent positive evidence plausibly will assist L2 learners to perceive the use of L2 structure. Furthermore, the infrequency/frequency of target structure in the input is worthwhile to be checked against real data using some sort of corpus. These confirmatory studies, along with an investigation of the infrequency/frequency of target structure in the input, are left to further research.

It could be argued that there other principles may have an influence on the earlier acquisition of one of dative structures in a particular language (e.g. the PD structure is acquirable earlier than the DOD structure in the L2 English study whereas the DOD structure is prior in the L2 Arabic study). An example of these principles is the discourse principles such as given and new information (Chang 2004). Another example are properties of the NP such as animacy, pronominality, definiteness, concreteness and number of the two internal arguments, as investigated by Jäschke & Plag (2015). An extra instance is the end-weight principle Bresnan et al., (2007). It was a limitation of this study that it could not interpret such elements as in the early acquisition since the design of the questionnaire did not involve any test sentences to

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measure the effect any of these elements. It is worth investigating the influence of these on the early acquisition of a particular structure in a particular language.

The possibility of the acquisition of the PD structure that is not allowed in the L1 grammar more that the acquisition of the DOD structure that is not allowed in the L1 grammar as found by the pre-intermediate English learners of Arabic acquiring the SPD structures and failing to notice the grammaticality of the SDOD1 structure. This was justified by the absence of sufficient positive evidence and the low proficiency level of the participants. This possibility should receive further investigation.

Further investigation ought to explore whether the general preference for the PD structure in L2 English and the preference of the DOD structure in Arabic, decrease as the proficiency levels of the participants increase and equally assess the grammaticality of both structures despite the unmarkedness of one of them.

The findings may reveal many interesting observations by applying a different approach, such as a mixed models (Baayen 2008: 241-302). Moreover, applying such an alternative way of looking at the data would allow us to have a better understanding of how the different variables interact. The mixed model allows us to obtain generalizable findings, even when the design is not completely balanced. It also allows us to have a fine-grained inspection of the variability of the random effects, which can offer additional insights. We will keep such an approach for further study.

Appendix A

THE UNIVERSITY of York

DEPARTMENT OF LANGUAGE AND LINGUISTIC SCIENCE
Heslington, York, YO10 5DD, UK
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Information Sheet for Participation in a Research Study

Please keep this information sheet and a signed copy of the consent form for you.

Your participation is warmly appreciated. However, it is really vital for you to understand why this research is being carried out and what it will involve. Please read the following information carefully. If there is anything you do not understand well, or if you want more information, please do ask the researcher.

- **Title of project:** Second Language Acquisition of the Dative Alternation in English and Arabic: A Bidirectional Study of English and Arabic.
- **Principal Researcher**: Anwar Saad Al-Jadani.
- **Supervising Faculty Member:** Prof. Peter Sells.

I.   This section presents details of the study you will be participating in:

1.   What is the research about?

This study aims to understand to what extent the first language influence on the second language acquisition. By carrying out this study, the researcher hopefully will gain a better understanding of how second language learners acquire the target language grammar.

2. Who is carrying out the research?

This research study is carried out by a PhD candidate at the Department of Language and Linguistic Science at the University of York. This study has been reviewed and approved by the Departmental Ethics Committee of the Department of Language and Linguistic Science at the University of York. If you have any questions regarding this, you can contact the chair of the L&LS Ethics Committee, Dom Watt (**email:** dominic.watt@york.ac.uk; **Tel:** (01904) 322671.

3. What does the study involve?

If you agree to participate in this study, you will be asked to complete two tasks. The first task is a multiple choice gap-filling as a proficiency test. The second task is a Picture-sentence rating in which will judge whether sentences in the target language are correct or not. These tasks will take nearly an hour for non-native participants and half an hour for native speakers (the control group).

II.   This section gives description to your rights as a research participant:

1. Do I have to take part?

Your participation in this research study is voluntary. I would like you to consent to participate in this study as I believe that you can make an important contribution to the research. If you do not wish to take part you will still be free to withdraw without giving a reason, even during the session itself. If you withdraw from the study, I will destroy your data and will not use it in any way.

2. What are the possible risks of taking part?

There are no risks for participation in this research study.

3. Are there any benefits to participating?

The information you provide can assist the researcher to understand certain syntactic issues regarding how first language influences second language.   Moreover, the contributed

information will assist in understanding how people learn second languages, and this might help improve the way that languages are taught in the classroom.

4. What will happen to the data I provide?

The data you provide will be used alongside the data of other participants to be presented in a PhD thesis.

5. What about confidentiality?

Your personal data will be seen only by the investigator and will be kept strictly confidential. Participants will be assigned an arbitrary number for the purposes of data analysis. The data you provide will be handled, stored and later destroyed securely. All of your information and responses will be kept confidential in a safe location in the University of York, Department of Language and Linguistic Science and destroyed securely.

6. Will I know the results?

A summary of the results will be available to you upon request.

7. What if I have more questions?

It is the researcher's pleasure to answer any questions in regard with the research procedures. If you have further concerns or questions, please do not hesitate to contact:

> *Anwar Saad R Al-Jadani.*
> *Department of Language and Linguistic Science*
> *University of York, Heslington, York, YO10 5DD*
> *Email: asra500@york.ac.uk*

THE UNIVERSITY *of York*

Informed Consent Form for Participation in a Research Study

- **Title of project:** Second Language Acquisition of the Dative Alternation in English and Arabic: A Bidirectional Study of English and Arabic.
- **Principal Researcher**: Anwar Saad Al-Jadani.

I.   <u>**This section shows that you are giving your informed consent to take a part in this research study:**</u>

This form is for you to state whether or not you agree to participate in the study. Please read and answer every question. If there is anything you do not understand, or if you want more information, please do ask the researcher.

1. Have you read and understood all the aforementioned information on the study?   Yes ❑ No ❑

2. Have you had an opportunity to ask questions about the study and have these been answered satisfactorily?   Yes ❑ No ❑

3. Do you understand that the information you provide will be held in confidence by the researcher, and your name or identifying information about you will not be mentioned in any publication?   Yes ❑ No ❑

4. Do you understand that you may withdraw from the study at any time before the end of the data collection session without giving any reason, and that in such a case all your data will be destroyed?

    Yes ❐ No ❐

5. Do you agree to participate in the study?

    Yes ❐ No ❐

6. Do you agree to the researcher's keeping your contact details after the end of the current project, in order that he may contact you in the future about possible participation in other studies?

    Yes ❐ No ❐

(You may take part in the study without agreeing to this).

- By signing below I acknowledge that I have read and understand the above information. I have received a copy of the above consent and desire of my own free will to participate in this study. My signature below indicates my consent.

Participant's name (in BLOCK letters):_____

Email: _____

Your signature: _____

- I certify that the informed consent procedure has been followed, and that I have answered any questions from the participant above as fully as possible.

Researcher's name: Anwar Saad R Al-Jadani

Date: /   /

Your Assistance is blessed and unforgettable.

Appendix B

Dear participant,

On each slide, there is a picture followed by a sentence in English. The sentence describes the picture.

For each sentence, please indicate whether you feel it is a good or bad sentence of English.

If you feel it is **bad**, choose '**1**' (= Bad example).

If you are **not sure**, choose '**2**' (= Not sure).

If you feel it is **good**, choose '**3**' (= Good example).

The questionnaire has examples like the following. Your task is to judge each sentence, whether it is a good or bad sentence of English.

Kindly read the following examples before answering the questionnaire.

Sentence	Rating		
John the box put on the table.	1	2	**3**
John put the box on the table.	**1**	2	3
The Olympic Games take place every four years.	1	2	**3**
My parents lives in a very big flat.	**1**	2	3
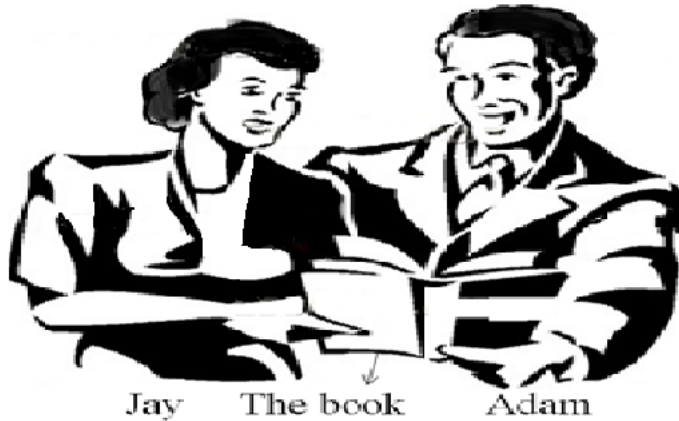
Jay   The book   Adam

Slid number	Sentence	Rating		
5	Adam showed Jay the book.	1	2	3
51	Adam showed the book Jay.	1	2	3
69	Adam showed the book to Jay.	1	2	3
87	Adam showed to Jay the book.	1	2	3

Messi   Iniesta

Slid number	Sentence	Rating		
27	Messi shot the ball Iniesta.	1	2	3
43	Messi shot the ball to Iniesta.	1	2	3
71	Messi shot to Iniesta the ball.	1	2	3
89	Messi shot Iniesta the ball.	1	2	3
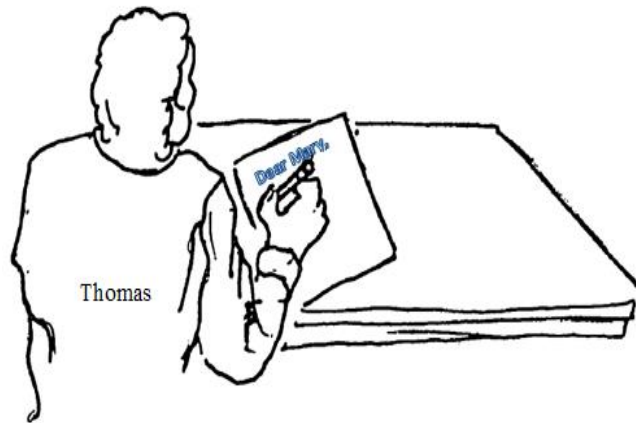
Slid number	Sentence	Rating		
25	Thomas wrote to Mary a letter.	1	2	3
37	Thomas wrote a letter Mary.	1	2	3
55	Thomas wrote Mary a letter.	1	2	3
91	Thomas wrote a letter to Mary.	1	2	3
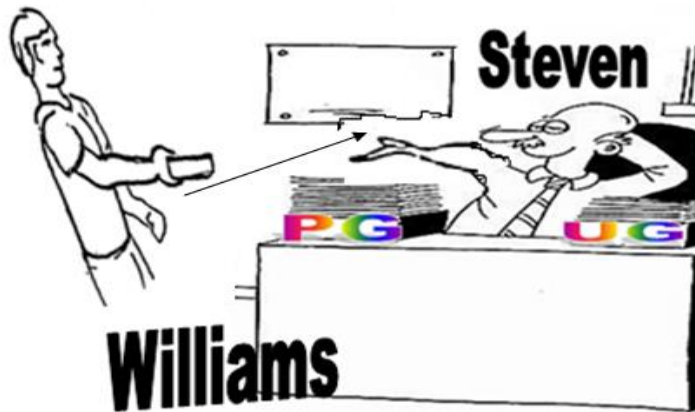
Slid number	Sentence	Rating		
23	Williams handed the paper to Steven.	1	2	3
41	Williams handed Steven the paper.	1	2	3
53	Williams handed the paper Steven.	1	2	3
93	Williams handed to Steven the paper.	1	2	3

Slid number	Sentence	Rating		
9	Ellis threw the pen Peter.	1	2	3
39	Ellis threw to Peter the pen.	1	2	3
57	Ellis threw Peter the pen.	1	2	3
79	Ellis threw the pen to Peter.	1	2	3

Slid number	Sentence	Rating		
13	Tom told the child the story.	1	2	3
45	Tom told to the child the story.	1	2	3
61	Tom told the story the child.	1	2	3
81	Tom told the story to the child.	1	2	3
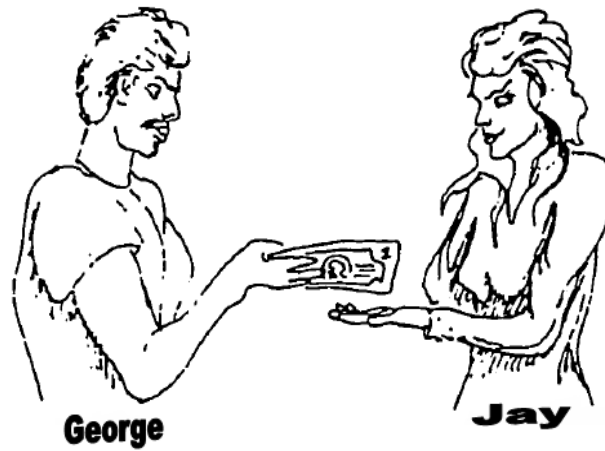
Slid number	Sentence	Rating		
11	George paid to Jay ten pounds.	1	2	3
29	George paid ten pounds to Jay.	1	2	3
59	George paid ten pounds Jay.	1	2	3
77	George paid Jay ten pounds.	1	2	3
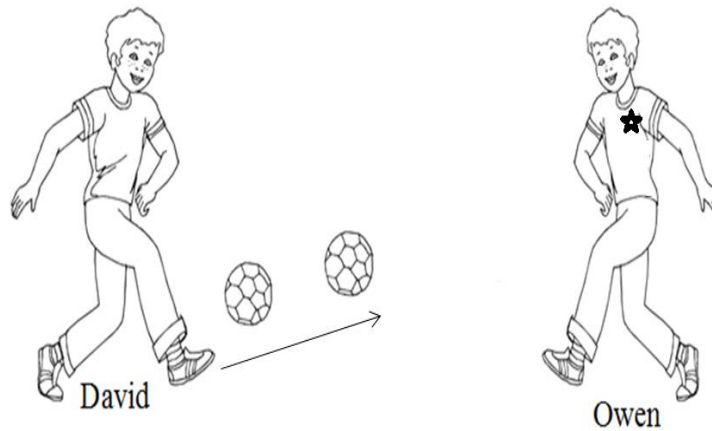
Slid number	Sentence	Rating		
21	David kicked Owen the ball.	1	2	3
47	David kicked the ball Owen.	1	2	3
85	David kicked to Owen the ball.	1	2	3
65	David kicked the ball to Owen.	1	2	3
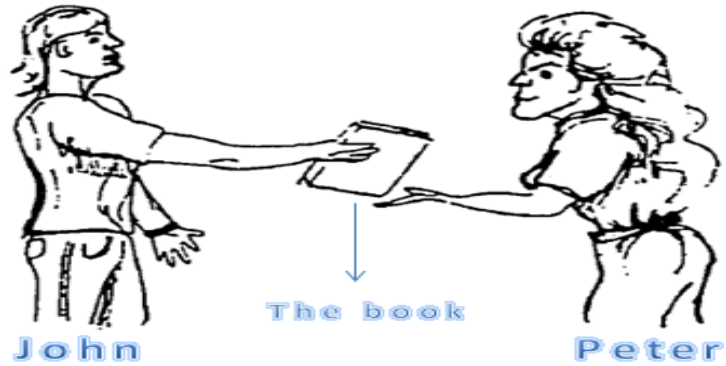
Slid number	Sentence	Rating		
7	John gave the book Peter.	1	2	3
35	John gave Peter the book.	1	2	3
75	John gave the book to Peter.	1	2	3
95	John gave to Peter the book.	1	2	3

Slid number	Sentence	Rating		
17	Susan read the story Kim.	1	2	3
31	Susan read to Kim the story.	1	2	3
73	Susan read Kim the story.	1	2	3
97	Susan read the story to Kim.	1	2	3
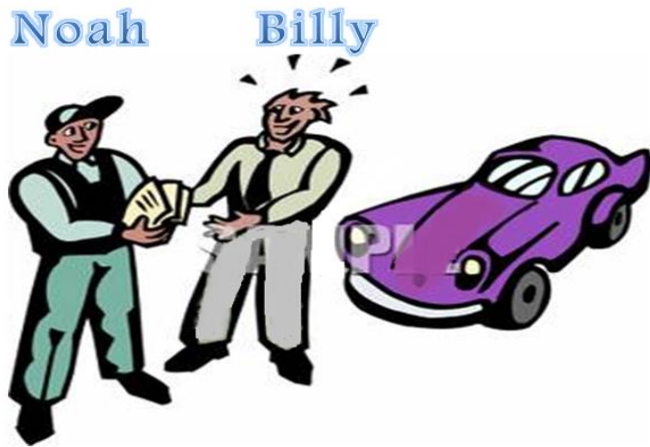
Slid number	Sentence	Rating		
19	Noah sold to Billy the car.	1	2	3
49	Noah sold the car to Billy.	1	2	3
67	Noah sold Billy the car.	1	2	3
83	Noah sold the car Billy.	1	2	3
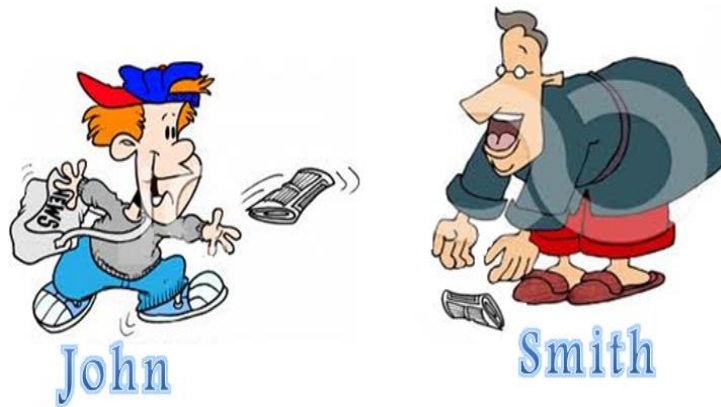
Slid number	Sentence	Rating		
15	John tossed to Smith the newspaper.	1	2	3
33	John tossed Smith the newspaper.	1	2	3
63	John tossed the newspaper Smith.	1	2	3
99	John tossed the newspaper to Smith.	1	2	3

Appendix C

أخي الكريم,

السلام عليكم ورحمة الله وبركاته,   وبعد:

تحتوي هذه الاستبانة على مجموعة من الصور كل صورة تليها جملة معبرة. هذه الجمل متبوعة بثلاثة خيارات:

3: جملة صحيحة.

2: غير متأكد.

1: جملة خاطئة.

المطلوب منك- أيها الكريم- أن تتأمل كل جملة ثم تقيمها فإن رأيتها صحيحة لغويًا فاختر "3" , و إن كنت غير متأكد فاختر
"2" و إن كانت خاطئة فاختر "1".

تحتوي الاستبانة جمل مشابهة للجمل التي في الجدول التالي, المطلوب منك أيها الفاضل أن تقييم الجمل لغويا كما
هو موضح في الجدول التالي.

فضلًا اقرأ الجمل التالية قبل التقييم.

التقييم			الجملة
3	2	**1**	اشتريت بيضاء سيارة
3	2	1	شممت وردة صفراء
3	2	**1**	كان المعلمين حاضرون
3	2	1	إن الطلاب مجتهدون

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هند   الكتاب   محمد

التقييم			الجملة	رقم الشريحة
3	2	1	أرى محمدٌ هندَ الكتابَ.	**5**
3	2	1	أرى محمدٌ الكتابَ هندَ.	**51**
3	2	1	أرى محمدٌ الكتابَ لهندَ.	**69**
3	2	1	أرى محمدٌ لهندَ الكتابَ.	**87**

ماجد   رابح

التقييم			الجملة	رقم الشريحة
3	2	1	سددَ ماجدٌ الكرةَ رابحًا.	**27**
3	2	1	سددَ ماجدٌ الكرةَ إلى رابح.	**43**
3	2	1	سددَ ماجدٌ إلى رابح الكرةَ.	**71**
3	2	1	سددَ ماجدٌ رابحًا الكرةَ.	**89**
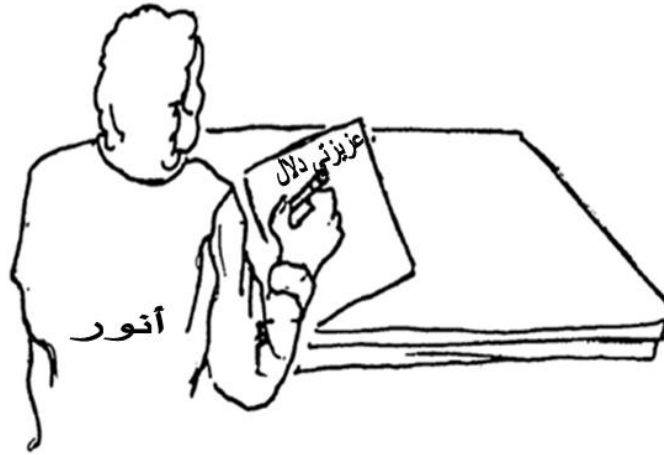
التقييم			الجملة	رقم الشريحة
3	2	1	كتبَ أنورُ إلى دلالَ رسالةً.	**25**
3	2	1	كتبَ أنورُ رسالةً دلالَ.	**37**
3	2	1	كتبَ أنورُ دلالَ رسالةً.	**55**
3	2	1	كتبَ أنورُ رسالةً إلى دلالَ.	**91**

التقييم			الجملة	رقم الشريحة
3	2	1	سلّمَ طلالٌ البحثَ ليوسفَ.	**23**
3	2	1	سلّمَ طلالٌ يوسفَ البحثَ.	**41**
3	2	1	سلّمَ طلالٌ البحثَ يوسفَ.	**53**
3	2	1	سلّمَ طلالٌ ليوسفَ البحثَ.	**93**

فواز   فايز → القلم

التقييم			الجملة	رقم الشريحة
3	2	1	رمى فايزٌ القلمَ فوازًا.	**9**
3	2	1	رمى فايزٌ إلى فواز القلمَ.	**39**
3	2	1	رمى فايزٌ فوازًا القلمَ.	**57**
3	2	1	رمى فايزٌ القلمَ إلى فوازٍ.	**79**

هذه نهاية القصة

الشيخ   الطفل

التقييم			الجملة	رقم الشريحة
3	2	1	أخبرَ الشيخُ الطفلَ القصةَ.	**13**
3	2	1	أخبرَ الشيخُ للطفلِ القصةَ.	**45**
3	2	1	أخبرَ الشيخُ القصةَ الطفلَ.	**61**
3	2	1	أخبرَ الشيخ القصةَ للطفلِ.	**81**

هاني   سمر
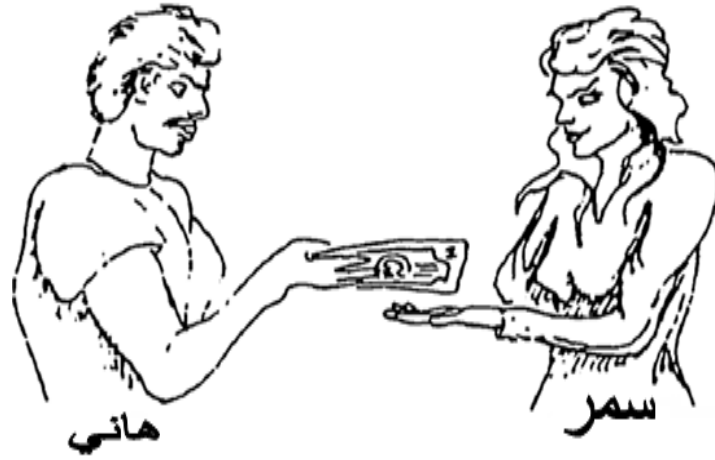
	التقييم		الجملة	رقم الشريحة
3	2	1	دفعَ هاني لسمرَ عشرةَ دراهمٍ.	**11**
3	2	1	دفعَ هاني عشرةَ دراهمٍ لسمرَ.	**29**
3	2	1	دفعَ هاني عشرةَ دراهمٍ سمرَ.	**59**
3	2	1	دفعَ هاني سمرَ عشرةَ دراهمٍ.	**77**
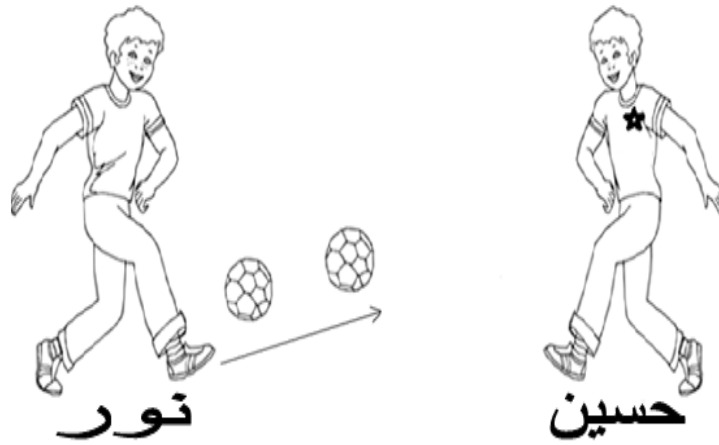
نور   حسين

	التقييم		الجملة	رقم الشريحة
3	2	1	ركلَ نورٌ حسينًا الكرةَ.	**21**
3	2	1	ركلَ نورٌ الكرةَ حسينًا.	**47**
3	2	1	ركلَ نورٌ الكرةَ إلى حسينٍ.	**85**
3	2	1	ركلَ نورٌ إلى حسينٍ الكرةَ.	**65**

مجدي   الكتاب   أنور

رقم الشريحة	الجملة	التقييم		
7	أعطى مجدي الكتابَ أنورَ.	1	2	3
35	أعطى مجدي أنورَ الكتابَ.	1	2	3
75	أعطى مجدي لأنورَ الكتابَ.	1	2	3
95	أعطى مجدي الكتابَ لأنورَ.	1	2	3

زيد   هدى

رقم الشريحة	الجملة	التقييم		
17	قرأتْ هدى القصةَ زيدًا.	1	2	3
31	قرأتْ هدى لزيدٍ القصةَ.	1	2	3
73	قرأتْ هدى القصةَ لزيدٍ.	1	2	3
97	قرأتْ هدى زيدًا القصةَ.	1	2	3

أحمد   سالم

التقييم			الجملة	رقم الشريحة
3	2	1	باعَ سالمٌ لأحمدَ السيارةَ.	**19**
3	2	1	باعَ سالمٌ السيارةَ لأحمدَ.	**49**
3	2	1	باعَ سالمٌ أحمدَ السيارةَ.	**67**
3	2	1	باعَ سالمٌ السيارةَ أحمدَ.	**83**

فايز   طارق

التقييم			الجملة	رقم الشريحة
3	2	1	قذفَ فايزٌ الجريدةَ إلى طارقٍ.	**15**
3	2	1	قذفَ فايزٌ طارقًا الجريدةَ.	**33**
3	2	1	قذفَ فايزٌ الجريدةَ طارقًا.	**63**
3	2	1	قذفَ فايزٌ إلى طارقٍ الجريدةَ.	**99**

List of Abbreviation

Abbreviations	Stand for	Abbreviations	Stand for
L1	First Language.	PD	Prepositional Dative
L2	Second Language.	DOD	Double Object Dative
PP	Prepositional Phrase.	P	Preposition.
VP	Verb Phrase.	SD	Scrambling Dative
GEN	Genitive Case.	NRRs	Narrow Range Rules.
NOM	Nominative Case.	BRRs	Broad Range Rules.
ACC	Accusative Case.	MS	Mean Square
UG	Universal Grammar	FT/FA	Full Transfer/Full Access
QPT	Quick Placement Test	Ben	Benefactive
SLA	Second Language Acquisition.	SD	Std. Deviation
T	T-test score	DF	degree of freedom
Sig	P-Value	F	F-distribution (F-test)
RFT	Reduced Form Tendency	FFH	Failed Feature Hypothesis
DOM	Differential Object Marking	FAH	Full Access Hypothesis
EF	Edge Feature		
LIH	Local Impaired Hypothesis		
FDH	Fundamental Difference Hypothesis		
RDH	Representational Deficit Hypothesis		
BDOD1	Basic Double Object Dative structure with alternating verbs in Arabic ('give', 'sell', 'hand', 'tell' and 'show')		
BDOD2	Basic Double Object Dative structure with non-alternating verbs in Arabic ('pay', 'read', 'write', 'throw', 'kick', 'toss' and 'shoot')		
SDOD1	Scrambling Double Object Dative structure with alternating verbs in Arabic ('give', 'sell', 'hand', 'tell' and 'show')		

SDOD2	Scrambling Double Object Dative structure with non-alternating verbs in Arabic ('pay', 'read', 'write', 'throw', 'kick', 'toss' and 'shoot')
BPD1	Basic Prepositional Dative structure with alternating verbs in Arabic ('give', 'sell', 'hand', 'tell' and 'show')
BPD2	Basic Prepositional Dative structure with non-alternating verbs in Arabic ('pay', 'read', 'write', 'throw', 'kick', 'toss' and 'shoot')
SPD1	Scrambling Prepositional Dative structure with alternating verbs in Arabic ('give', 'sell', 'hand', 'tell' and 'show')
SPD2	Scrambling Prepositional Dative structure with non-alternating verbs in Arabic ('pay', 'read', 'write', 'throw', 'kick', 'toss' and 'shoot')

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