Facilitating Lexical Acquisition in Beginner Learners of Italian Through Popular Song

by

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Abstract

This study examines the effects of Song and Involvement Load on the acquisition and retention of lexical items by beginner learners of Italian. Lexical acquisition is investigated via an incidental learning experiment that is based on the premise that growth in L2 vocabulary results from rehearsal and repeated exposure to lexical items in a variety of contexts. More specifically, the study hypothesizes that Song contributes to subvocal rehearsal, a mechanism that facilitates the retention of phonological information. In addition, the study hypothesizes that Involvement Load, as posited by Laufer and Hulstijn (2001), contributes to retention through "elaborate processing"(Craik & Tulving, 1975) of lexical items.

In order to evaluate participants' lexical acquisition, an experiment with pretest/posttest design was carried out. Participants were divided into one of five groups consisting of a Control Group and four treatment groups. Treatment groups were exposed to a Song either in a sung condition or read as a poem (i.e. without music) while the Control Group completed only the pretest and posttests. Treatment groups also completed lexical tasks designed with either low or high levels of Involvement Load. The pretest and posttests (administered at four and eight weeks respectively after the pretest) were based on Paribakht and Wesche's (1996) Vocabulary

Knowledge Scale. It was hypothesized that in the case of both short-term acquisition (four weeks after the pretest) and retention (eight weeks thereafter) (i) participants exposed to Song would obtain higher scores than participants only exposed to the lyrics; (ii) participants completing High Involvement tasks would score higher than participants completing Low Involvement tasks; and (iii) the effects of Song would be greater than the effects of Involvement Load on test scores.

Results indicated that at both posttests, participants exposed to Song obtained higher scores than participants only exposed to lyrics (p=0.004). Additionally, participants carrying out High Involvement tasks scored higher than participants carrying out Low Involvement tasks (p=0.017). However, a comparison of the strength of the effects of Song and Involvement Load on acquisition and retention of target items yielded inconclusive results (p=.383).

The validation of many of the hypotheses suggests that song and involvement load are effective in the acquisition and retention of L2 lexical items and should be implemented in the L2 curriculum.

Per mio Nonno

che non ha mai saputo quanto importante la sua lingua sarebbe diventata per me.

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1 Introduction

> Io la Musica son, ch'ai dolci accenti
> so far tranquillo ogni turbato core,
> ed or di nobil ira ed or d'amore
> posso infiammar le più gelate menti.
>
> *L'Orfeo, favola in musica - Prologo*
> (Monteverdi, 1607)

Humans have long recognized the powerful force that is music. Research in anthropology and history has shown that from humanity's very beginnings, music has played an integral part in shaping the peoples and cultures of the world. Music has been such a fundamental element of humanity's development that researchers cannot agree as to which came first, music or language. Compelling theories emerging from Anthropology, History, and the Cognitive Sciences indicate music may not merely be a social or cultural creation, but rather that it may share language's most elementary feature: innate biological inheritance (Mithen, 2005, p. 253), giving credence to the adage that 'music is a universal language.' Indeed, as David Huron points out, "wherever you find evidence of human settlement, you find evidence of musical activities" (cit. in Peretz & Zatorre, p. 62) and the very fact that most of the world's cultures place great importance on singing in particular attests to the "universal binding of music and speech" (Aiello, 1994). Furthermore, many scholars argue that early Homo sapiens may have utilised a communication system known as Song-1. This primitive precursor to speech is described as intonational vocalizations that have musical features of pitch, intensity, and rhythmic variation and some claim early humans possessed Song-1 even before language as we know it today (Murphey, 1990a, p. 95).[1] This implies that "[Homo sapiens] could sing long before he could talk and that

[1] Mithen refers to Song-1 as 'Hmmmm', which in essence refers to a type of proto-singing that is Holistic, manipulative, multi-modal and mimetic and which is, in Mithen's view, a precursor to language.

singing was in fact a prerequisite to speech and hence language" (Murphey 1990a, p. 95). This circular debate concerning whether music or language came first has yet to be resolved yet it does make one thing very clear: music and language share a strong connection. In fact, ethnomusicology has examined the relationship between music and language from an anthropological perspective "linking the structure and practice of musical performances and styles with music's deep embeddedness in local and translocal forms of social imagination, activity, and experience" (Feld & Fox, 1994, p. 25). Music, like language, is so entrenched in the world's cultures that it has generated a vast literature in musicology, acoustics, linguistics, literary studies, philosophy, psychology, and anthropology, in an effort to examine its relationship to language (Feld & Fox, 1994, p. 26). In fact, scholars in these fields emphasize that music shares many of the features that are considered inherent to language and therefore that formal linguistic models can also be applied to music:

> [Music] is considered amenable to the analytic techniques and models developed for linguistic phonology and syntax. This position is often sustained by analogies between the distributional organization of musical pitch and the phonetic organization of language. Analogies between the harmonic or metrical or motivic organization of musical works and the syntactic organization of language, deeply rooted in Western musical theory, have been the basis for the enormous influence of generative syntactic theory on cognitivist music theory and ethnomusicology. (Feld & Fox, 1994, p. 29)

Such a view of music has also prompted scholars to examine the relationship of music and language from the opposite angle; that is, by looking at the musicality of language:

Linguists often focus on "the musical" – that is suprasegmental, iconic, or non-discrete – dimensions of spoken discourse. These include rhythm, meter, pausing, and other durational and stress phenomena in speech and verbal art, as well as characteristics of voice quality and timbre. Linguistic work has also focused on the continua of relative tonal stability and contour

stylization which cross-cut speech intonation and sung melody, linking musical melody and linguistic intonation to an iconic, emotional level of meaning that is completely interwoven with discrete, segmentable, conventional levels of linguistic organization (Feld & Fox, 1994, p. 32).

Furthermore, certain genres of singing call attention to the fact that the boundary between song and speech is often blurred, further highlighting their interrelatedness:

> An alternative strand in the history of discussions of music and languages involves empirical inquiry into the phenomenological intertwining of musical and linguistic parameters in situated acts of communication. This view has focused on the cross-cultural ubiquity of texted vocal music, on musical speech surrogates, on intermediate poetic and performative forms and genres, and on means of articulation that call attention to the boundaries of speech and song, such as chant, recitative, *sprechgesang* (sung speech), *sprechstimme* (dynamically, rhythmically, and intonationally heightened speech), preaching, and lamentation. (Feld & Fox, p. 31)

Words and music are so closely related physiologically and perceptually that some theories concerning the origins of music claim that music is in fact a form of heightened speech (Bernstein, 1976).

1.1 Purpose of the study

Can music influence the acquisition of language? More specifically, can song play a role in the acquisition of foreign language (henceforth L2) vocabulary[2]? These questions have preoccupied me for many years in my experiences as an undergraduate Italian language instructor. I use songs frequently in my classroom as didactic aids and find not only that students thoroughly enjoy the listening experience, but that they also seem more open to and

[2] The SLA literature distinguishes between the terms 'second language acquisition' and 'foreign language acquisition' on the basis of whether or not the target language is being learned in the environment of one's native language. The former refers to the learning of a target language in the environment in which that language is spoken (e.g., English speakers learning Italian in Italy) while the latter refers to the learning of a target language in the environment of one's own native language (e.g., English speakers learning Italian in Canada) (Gass & Selinker, 2001). However, the term L2 is utilised in this study to refer to acquisition in both learning environments.

engaged with their learning. They also seem to recall the vocabulary they come across in song lyrics rather better than when they attempt to memorize words they encounter in their textbook. In addition to this anecdotal evidence, when I reflect on my own experience as a second language learner, and more specifically as a foreign exchange student in Italy, I recall vividly that over the course of a given day a song I had heard on the radio would play over and over again in my mind, seemingly allowing me to subconsciously recall new words and their meanings. Many of these songs still resonate in my mind today. While, as the introduction to this study suggests, there is ample evidence that song and language share many similarities, there is little by way of research delving into the effects of music on language acquisition and, more specifically, on its effect on second language acquisition in adults. For this reason, the present study seeks to explore the influence of Italian popular song on the acquisition and short-term retention of Italian vocabulary in beginner adult learners of Italian.[3] The purpose of this study is not only to better understand the effects of song on the second language learning process, but also to provide second language educators and learners with research-based tools that can make their task of teaching/learning L2 vocabulary more efficient and more effective. I argue in this study that repeated exposure to songs can lead learners to better retention of lexical items found in the song lyrics than when lexical items are learned in the absence of music. Quantitative experimentation carried out for this study in undergraduate beginner level Italian courses seeks to verify this hypothesis and the corollary of the findings is that song should unquestionably be an integral part of the L2 learning process and therefore of the L2 curriculum.

[3] The distinction between *acquisition* and *short-term retention* requires clarification here. The term *acquisition* refers to the process that reflects the development of lexical knowledge and in the context of this study, acquisition is reflected in the mean scores at posttest. *Short-term retention*, on the other hand, refers to the ability to maintain in the short-term lexical items that have been acquired. In this study, short-term retention is reflected in the mean scores at delayed posttest.

1.2 Rationale

The more recent history of research in Second Language Acquisition (henceforth SLA) has seen the production of an increasing number of important works in the area of vocabulary acquisition (see e.g. Arnaud & Béjoint, 1992; Carter & McCarthy, 1988; Coady & Huckin, 1997; Ellis, 1997; McCarthy, 1990; Meara, 1989; Nation, 1990; Schmitt & McCarthy, 1997). These works have brought a considerable amount of focus to the understanding of how second language learners process, store, and retrieve the L2 lexicon and have helped to give the study of the L2 lexical acquisition process a place of due importance in SLA research. However, despite the strides that have been made in terms of understanding how the human brain acquires the lexicon of an L2, many aspects of the lexical acquisition process and its subsequent storage in the human brain still remain unclear. Equally as poorly explored is the role of music in learning beyond the preschool years. There exists a significant corpus of research delving into the positive role music plays in the global development of children, and more specifically on their L1 language development, yet it seems music and learning become inexplicably separated in the Western educational system as children get older and is all but absent in the postsecondary curriculum. What is the reasoning behind this shift? Numerous language educators (e.g. Bruno, 1989; Costamagna, 1994; Dalmonte, 1994; Gatti-Taylor, 1980; Jolly, 1975; Karsenti, 1996) suggest utilizing song in the L2 classroom offers benefits to the language learner in the form of lowered inhibition, heightened motivation, and improved recall. In the research on memory for language, scholars (e.g. Baddeley, 1995; Baddeley & Hitch, 1974; Gathercole & Baddeley, 1993) argue that rehearsal is a key factor in the ability to maintain linguistic information in the short-term before it can be consolidated in the long-term. This theory supports the argument some scholars have advanced (e.g. Murphey, 1990a; Wallace, 1994; Yalch, 1991) that song can in fact contribute to the rehearsal of language in the mind, thereby allowing the language to be

better retained. If this is the case, then the daunting task of lexical acquisition facing the language learner and of lexical instruction facing the language educator could potentially be facilitated so as to become more efficient. Based on the fact music and general learning have become separated in the West, it is not surprising that very few studies on the role of song in learning language beyond the preschool years have been conducted (see e.g., Ayotte, 2004; Jolly, 1975; Salcedo & Harrison, 2002; Wallace, 1994;) and none, to my knowledge, provide a systematic examination of the effects of song on the acquisition of the L2 lexicon. This is an obvious lacuna in the research on vocabulary acquisition and is an area that merits attention for the simple reason that it could provide insight into the role pedagogical intervention can play in the L2 lexical acquisition process, an inherently inefficient and complex process that, as will be described in Chapter 3, is a constant source of difficulty for learners and educators alike. In response to this lacuna, the present experimental study offers a contribution to the field of L2 lexical acquisition so that the enormous task facing language learners and educators might be slightly less daunting and so that song be recognized and restored as an essential tool in the learning process.

In the second chapter of this work, entitled *Song and Language Across the Ages*, a brief historical overview of the various uses of song in the Western world as a means of disseminating folklore to the local populace is provided in addition to a discussion of the contemporary use of song as an effective advertising tool. This is then followed by a discussion of the role of song in child and young adult learning and development and by the application of song to various language learning theories and frameworks and presents evidence defending the use of song as an effective language-learning tool. In the third chapter, *Second Language Vocabulary Acquisition: Literature Review*, an in-depth analysis of the processes underlying the acquisition of vocabulary is provided with a focus on both theories and experiments related to these

processes. Next, a detailed analysis of the theories of Implicit/Explicit and Intentional/Incidental Learning is presented, along with an examination of the Involvement Load Hypothesis. In Chapter 4, *Methods and Procedures*, the hypotheses and methodology utilised in carrying out this study are presented while Chapter 5, *Results*, describes the statistical analyses that were carried out on the data along with the general results of those analyses. In Chapter 6, *Discussion,* a more focused examination of the statistical analyses is provided in both the context of the present study and in terms of the broader implications on L2 vocabulary acquisition. In addition, the pedagogical implications of the study are discussed, implications for receptive and productive lexical acquisition are addressed, the learning of particular target items is discussed, and the influence of L1 and L2 on target item acquisition is considered. Finally, Chapter 7, *Conclusion*, highlights the contributions this study makes to research in L2 vocabulary acquisition, addresses some of the limitations of this study, and offers areas that should be considered in future research on the relationship between song and L2 vocabulary acquisition.

2 Song and language across the ages

The history of singing is likely as old as the history of humanity and though it is impossible to trace its evolution across time and across all cultures in the present work, suffice it to say that the act of singing might be considered one of the common threads linking all peoples. If this is so, then the question that follows is then rather obvious: Why do humans sing? Singing is generally seen as a form of communication, a means of expressing the feelings that span the entire gamut of the human experience (Marek, 2007). However, it is generally accepted that prehistoric humans likely sang in imitation of the sounds heard in nature – the singing of birds, the howling of the wind, the cries of animals – and that they may not yet have been aware of the notion of communicating ideas to others through song (Jespersen, 1922). Archaeological finds have not provided any evidence as to when communicative singing first came about, yet its evolution as a communication tool marks an important stage in the development of language. The ancient Sumerians provided us with the oldest extant piece of notated music and it is in the form of a song, the Hymn to Creation (Koopman, 1999). The Greek culture possesses a highly developed musical tradition that includes the singing of poetry dating from 600 B.C. while the Judaic culture has preserved songs dating from 500 B.C. and also bequeathed the Psalms of David and the Song of Solomon, which we also know were sung (Koopman, 1999). As Christianity began to establish itself as the official religion of the Roman Empire, it would also establish itself as the main force behind the development of thirteen centuries of Western music. Singing and religious rite were so enmeshed in early Christian culture that the two were nearly inseparable; music was considered acceptable only if it was "subservient to the liturgical text and inspired the mind to holy thoughts" (Marek, 2007, p. 5). Therefore, singing was considered the best medium through which to both worship and disseminate the Church's teachings. In the fifth

century A.D. Pope Gregory was instrumental in reorganizing the *schola cantorum* previously founded by Pope Sylvester, a school that trained men and boys as professional church musicians. Gregory's reforms "standardized the liturgical repertory and changed the character of the Christian service from unbridled ecstasy to subdued reverence" (Koopman, 1999) and it is in homage to him that this music is still known today as Gregorian Chant, one of the most significant bequests of the Middle Ages. Although religious music maintained its dominant grasp on the vast majority of the musical production of the Middle Ages, secular music also played an important, if secondary, role in the life of the populace. Diadori (1994) notes that during the Middle Ages, Latin language schools, whose basis was the teaching of prosody and rhythm, used song explicitly for the purpose of teaching these aspects of language. Furthermore, liturgical music was utilised during the period to emphasize the teaching of vowel quantity and for this reason song was regarded as an important instrument in the teaching of pronunciation.

In Europe from the seventh to the eleventh centuries, the powerful relationship between song and language came to be exemplified by the oral tradition through which stories and legends, most often in the form of lyric and epic poetry set to music, were passed on to the local (and largely illiterate) people. Albert Bates Lord (1995) writes that "epics, ballads, prose tales, ritual and lyric songs, as genres, existed orally before writing was invented" (p.1) and that from the Slavic Balkans to Greece to the Middle East, the tradition of singing stories is one that is passed on through generations. In Western Europe, this tradition is best exemplified through the lyric poetry of the Provençal troubadours, who could be considered the Western world's very first popular artists. These men were educated poet-musicians whose works were produced in the local vernacular (*langue d'oc*, also called Provençal) and who sang of issues that were of interest to the local audience, though more specifically they wrote and sang of idealized courtly love. According to Aubrey (1996), "the melodies of the troubadours constitute one of the earliest

repertoires of vernacular music to be preserved" (p. xvi) and the fact that their corpora survived the great unrest that resulted from the Albigensian Crusade and the repeated periods of social and political unrest attests to "the vitality of and widespread acclaim of their works" (Aubrey, 1996, p. xvi). Undoubtedly, the troubadours were more than mere entertainers; their art not only exerted significant influence on the poetics that developed in what would become present-day France and Italy, but it also provides tangible evidence of their adherence to the medieval theory that the writing of poetry and the creation of melody are interrelated.[4] The remarks and treatment of song by the poetic theorists of the late thirteenth century indicate that they were well aware that the songs of the troubadouric tradition were in fact sung and that music was a critical component in the essence of the poetry:

> At the very least, the theorists knew that musical and textual structures must match numerically – verse and stanza lengths must coincide. Although they did not have the vocabulary to express it one senses that these theorists knew that the melodies of the best songs were as much a feature of their essence as were the rhyme schemes and stanza structures, and that in some way the poet-composers conceived the poems and melodies together. (Aubrey, 1996, p. 74)

The Parisian Johannes de Grocheio who wrote during the thirteenth century is considered one of the most important figures in the theory of music. Although his writings reflect ideas that were specific to the thirteenth century, he also articulates concepts related to music and poetry that were characteristic of the previous era. In particular, Grocheio considers the interconnection between words and music, viewing text and melody as constituting a song's core and using the Aristotelian concepts of *forma* (music) and *materia* (words) to convey this idea:

[4] In the Middle Ages, authorities believed poetry fell under the rubric of *Musica* and this is evidenced in Jean de Garlande's treatise *Parisiana poetria* where he writes that "rhymed poetry is a branch of the art of music. For music is divided into the cosmic, which embraces the internal harmony of the elements, the humane, which embraces the harmony and concord of the humors, and the instrumental, which embraces the concord evoked by instruments. This includes melody, quantitative verse, and rhymed verse" (cit. in Aubrey, 1996, p. 70).

> The "material" is created by the composer in the first stage of *inventio*, and is then given "form" in the steps of *dispositio* and *elocutio* […]. Grocheio asserts that an author must take into account the subject matter of the song he is composing before he can arrange his materials accordingly. Grocheio discusses the differences among types of secular song, which are determined in part by subject matter, style, function, audience, and performance style. He further implies that the music must be appropriate for the text, since together they serve a common function. He suggests that certain guidelines be followed in devising an appropriate melody for a song. Grocheio's discussion of melodic form […] reflects his view that as in poetry, the way in which the elements of a melody are arranged is a factor in the song's success. (Aubrey, 1996, p. 77)

The transmission of troubadouric lyric and epic song along with the European oral tradition in general cannot be understood as a static process since memorization as we conceive of it today (i.e. the exact imprinting of text on the mind) was not likely how the songs were passed on. Individuals would likely retain the main features of a song while changing some of its details –order of stanzas, short phrases, and even words could diverge somewhat without losing the essence of the text. As Aubrey (1996) notes, "a singer might very well have simplified [a song] just as a scribe zealous for clarity and uniformity might have regularized it. […] [The] singers received a song, either by ear or by eye, and they appropriated that song into their own repertoires, retaining its essence, but reconstructing it according to their own performing style" (p. 34). However, there is some indication that the memorization of songs did take place to a certain extent:

> Many song texts mention "learning" (*aprendre*) or "remembering" (*sovenir*) a song – implying a process whereby a stable work of art, with a certain identity, was instilled in the singer's mind. In the famous *razo* about Arnaut Daniel, in which the troubadour steals an itinerant *joglar*'s song by listening to the *joglar* sing it to himself over and over during the night, the central object is a definite song. According to the story, the *joglar* was singing the song not to perfect it […] but to learn it. (Aubrey, 1996, p. 33)

Thus, it seems that the troubadours viewed their art as one in which words and music are of equal importance and that their task involved "forging a song out of words and music – *motz et*

son" (Aubrey, 1996, p. 78). But perhaps the troubadours themselves best describe the important relationship between words and music that shapes their craft. One troubadour in particular, Bernart de la Fon, describes this in his explanation of his own process of composition:

Leu chansonet' ad entendre ab leu sonet volgra far, coindet' e leu per apendre e plan' e leu per chantar, quar leu m'aven la razo, e leu latz los mots e.l so.	An easy little song to understand with an easy little tune, I want to make, graceful and easy to learn and smooth and easy to sing, for the subject came to me easily, and the words and melody lie easy. (cit. & trans. in Aubrey, 1996, p. 78)

Songs such as this one suggest that the troubadours viewed the lyrics and the melody of a song as "the cohesive parts of a whole" (Aubrey, 1996, p. 78) and it appears, then, that even in the Middle Ages the lyrics of a song along with the chosen melody were recognized as unified components having the potential to lead to the retention of the song.

In the twentieth and twenty-first centuries, product marketing has continued the exploitation of song as a vehicle for language recall in the form of advertising tunes known as jingles. These short, catchy tunes used in radio and television advertising are exploited as an effective advertising tool due to the belief that "music is effective both in creating favorable associations (especially emotional ones) and in enhancing memory for information that the sponsor wants to have associated with an advertised product" (Yalch, 1991, p. 268). Jingles have also been utilised as effective tools of persuasion for the reason that "academics and advertising professionals frequently claim that singing is an effective way to communicate copy in a memorable way" (Yalch, 1991, p. 268). One need only think of commonly advertised products such as Folgers coffee with its immediately recognizable jingle "The best part of waking up is Folgers in your cup" or the Tim Hortons' restaurant chain and its jingle "Always Fresh, always Tim Hortons" to identify with this notion. In a study conducted with the purpose of examining quantitatively whether or not there are significant differences in the recall of advertisements that

utilise jingles and those that do not, Yalch hypothesizes that if jingles function the way other mnemonics do, then music should assist in the retrieval process "because it provides a path to the desired verbal information when there are few other paths to this information" (Yalch, 1991, p. 270). Not surprisingly, his study of undergraduate business students concludes that music does indeed enhance memory for advertising slogans, thereby providing tested support for this long-held intuitive belief. Yalch's findings show that jingles operate as a mnemonic, particularly with repeated exposures, and that his participants experienced greater recall of brand names associated with slogans that had been presented via a jingle compared to when slogans were merely spoken. These results support Wells, Burnett, and Moriarty's (1989) statement that "finger-snapping, toe-tapping songs have tremendous power because they are so memorable" (p. 201).

In light of the preceding (brief) survey of the various roles singing has played in the lives of humans over the course of history, it is unquestionable that song is a powerful tool and its ability to lead to the retention of information should neither be overlooked nor undervalued. More specifically, as the troubadouric tradition suggests, song is a vehicle through which language itself can be retained and, as will be explored in the present study, it may even have the potential to assist in the process of L2 lexical acquisition.

2.1 Children and adolescents: the impact of song on learning and development

The influence of song on language learning seems obvious if we consider the case of children. Scholars have argued the human fetus is exposed to music when it is in the womb since the rhythm of the heartbeat (both mother's and fetus') and "the melodies of the circulatory, respiratory, and digestive systems, as well as the mother's own voice" (Murphey, 1990a, p. 102) are constantly sounding. There is also plentiful evidence that neonates demonstrate familiarity

with the intonation patterns of their mother's language very shortly after birth, that babies can also reproduce the intonation of the ambient language well before their first birthday, and that infants make active efforts to reproduce the sounds they hear (Hoff, 2009). Pound & Harrison (2003) also suggest that babies are rather distanced from adults since they have not yet been drawn into their particular culture and are also not aware that emotions are identifiable states. As such, communication between adult and baby is difficult but it can be facilitated through song since singing can highlight emotions. Mothers and caregivers speak to children in a highly melodic fashion known as 'motherese' and 'caretaker talk' respectively, which differs from normal speech patterns in terms of pitch level, contours, tempo, and rhythm (Trehub, 2003, p. 9). Adults imitate the sounds babies make by repeating them, raising the pitch and other times lowering it, speaking slowly and sometimes quickly. This response to a baby's voice is so natural that it underscores song as an unconscious process, something humans never have to learn (Papousek, 1994). Furthermore, the fact that adults respond to a baby's vocalizations as attempts at communication also indicates there is a powerful association between human language and singing. In fact, it has been demonstrated that the way in which parents or caregivers use certain tunes or intonation represents different emotions and that similar sound patterns or intonations are used in different languages to express the same emotional states (Pound & Harrison, 2003). Lullabies and play songs are utilised to both soothe and excite children and in fact, some scholars posit that maternal singing not only optimizes infant mood, but that it also "contributes to infant growth and development by facilitating feeding, sleeping, and even learning (Trehub 2003, p. 13).

In addition, music has been linked to the development of children's general cognitive, social, emotional, communicative, and creative abilities. In fact, it has been shown to be an excellent cross-curricular teaching tool since it can easily be integrated into many subject areas

and in general daily life. As Pound and Harrison (2003) note, "as well as learning to make music and learning about music, children can learn *through* music" (p. 68). Music has been shown to aid in children's personal, social, and emotional development, in their development of a positive attitude towards learning, enhancing their self-esteem, enabling them to make relationships with others, developing their self-control, fostering their independence, cultivating in them a sense of community, and encouraging their spiritual, moral, and social development (Pound & Harrison, 2003). Song, in particular, has been shown to provide these benefits and its role in shaping the many facets of children's development is underscored in the following table adapted from Pound & Harrison (2003, p. 74):

Table 1. Relationships between aspects of the music curriculum and aspects of personal, social and emotional development

	Aspects of personal, social and emotional development					
Aspects of the music curriculum	Dispositions and attitudes	Self-confidence and self-esteem	Making relationships	Behaviour and self-control	Self-care and independence	Sense of community
Singing	Children are highly motivated to sing. Singing enables them to channel enthusiasm and to experience success in doing something they want to do	Physical and emotional engagement in all kinds of singing develops an enhanced sense of self	Interactive game songs, partner songs, question and answer songs or duets Enjoyment of singing with others	Songs involving turn-taking Creating a calming atmosphere by singing	Spontaneous songs Independent singing	Group singing time: singing together a range of familiar songs, creating a sense of belonging

Playing a range of instruments and sound-making materials	Children are highly motivated to play instruments and this enables them to channel enthusiasm and to experience success in doing something they want to do	Physical and emotional engagement in all kinds of music-making develops an enhanced sense of self Playing an instrument successfully generates a high sense of achievement	Paired work on instruments	Songs in which instruments are played only at certain times	Making choices about which instruments to play Playing independently	Playing together, creating a sense of belonging
Making up songs and music in response to a range of stimuli (including dance)	Problem-solving strategies used to find ways of creating the desired effect	Expressing own feelings, ideas	Group-composing – collaboration, negotiation, working together to achieve common goal Respect for the ideas and contributions of others	Concentration, focus and discipline are all necessary to see through the process of composing or song-writing	Selecting the desired resources to make music which achieves the intended effect Being able to express moods, emotions and atmospheres	Sharing ideas Performing own music to others Developing collaboration and respect for others Making up songs and music which express home culture

Listening to a range of live or recorded music	Listening to music develops concentration and curiosity	Self-expectation of being able to listen or to be receptive	Listening to each other	Concentration Stillness	Choosing music that you want to listen to or reflect mood	Listening all together e.g. in assembly or group time
Responding to music through the use of a range of creative media, including dance and spoken language Recording musical ideas in a range of forms or media	Children are motivated to move to music Problem-solving strategies used to find ways of creating an appropriate response	Expressing own feelings, ideas	Sharing ideas and responses	Changing mode of response to reflect different stimuli	Developing a personal response to music including the expression of emotional responses	Developing groups responses to stimuli

But in addition to aiding in the development of children's general abilities, singing also supports, more specifically, the development of children's communication skills and in particular, their language skills. Pound and Harrison (2003) point out that "the fact that children can often sing words which they cannot yet speak, means that music has a role to play in developing vocabulary" (p. 77). Song provides children with the opportunity to practice the sounds and articulation of words and phrases and learn rhymes. It can also be an important tool for the child L2 learner:

> [Music] can play a similar role to that which it played when the child was learning his or her first language. Songs offer opportunities to rehearse words and phrases in much the same way as do stories and rhymes. The vocabulary is enhanced because the process of singing supports

> memorization. […] Monolingual […] children benefit from singing songs in other languages as part of the learning process. Recognizing that there are different ways to say things gives children an insight into the ways in which language works. This metalinguistic awareness is an important element in gaining increasing control of language […]. (Pound & Harrison, 2003, p. 77)

As Diadori (1994) notes, linguistic development in infancy is understood to be closely associated with the didactic use of song, illustrated through the teaching of nursery rhymes, lullabies, rhymes, and traditional hymns:

> Solo l'apprendimento linguistico della prima infanzia è stato continuativamente associato all'uso didattico delle canzoni, specialmente filastrocche, ninne nanne, rime e canti tradizionali. [...] Ancora oggi il canto è visto come un mezzo ideale per creare lo spirito di gruppo, indispensabile negli anni della crescita; inoltre i bambini non hanno inibizioni, data la loro naturale disposizione verso attività ludiche, e l'apprendimento linguistico viene ottimizzato, specialmente associando all'input verbale, anche elementi non verbali quali la melodia, il movimento (mimo, danza), le immagini. (p. 358)

Diadori points out that the deep-seated association between singing and learning seems to become lost as children move closer to adolescence and as a result there is a marked separation between learning and music in general in the Western educational system. Yet if singing has been shown to have such positive effects not only on the linguistic development of children but also on the development of their general social skills, it is rather puzzling as to why the use of song has not continued to be used as a pedagogic tool in the adolescent years in any significant way. Diadori (1994) indicates that it is at this crucial point in an adolescent's life that song takes on an important function, and that is as a surrogate for his or her affective need of musical discourse. Adolescence, she points out, corresponds to the point at which the affective intonation of *motherese* diminishes drastically in the home while teacher talk undergoes the same decline at school. She also highlights the fact that it is also during this period that didactic activities based on music effectively disappear from the curriculum and that it is for this reason that adolescents, who are still very much in need of the musical discourse so characteristic of their childhood, seek

it out and find it in popular music (Diadori, 1994). Murphey (1990a) also notes that pop songs are often the vehicle through which adolescents create feelings and associations and that these associations, resulting from the blossoming of their emotional-sexual systems, "may account for the great surge of feelings that many people experience when hearing songs that they grew up with during this period of their lives" (p. 234). Murphey's (1990a) in-depth analysis of popular songs reveals that they are "'young adult' in speech and topic with simple language and high affect" (p. 233) and that they are representative of the type of situations typical of adolescence. Not only do popular songs provide youth with contexts they can easily relate to, they also present discourse that is vague with respect to place, time, and characters, thereby allowing the listener to "use song to associatively soundtrack their own lives" (Murphey, 1990a, p. 233) and help them define their present. It is logical, therefore, that song should continue to be utilised as an effective didactic tool throughout adolescence since it continues to play an important role in the emotional and psychological development of youth.

2.2 Music/Song as an effective learning tool in the L2 classroom

Using song as a pedagogical tool in the L2 classroom often meets with great scepticism on the part of researchers and even some foreign language educators. Often viewed as a frivolous activity implemented by tired and/or lazy instructors, song is not always understood to be an effective or even marginally valuable language-learning tool and tends to be, as Melpignano (1980) notes, either "relegated to an end of the week reward to having made it through the relative pronouns, or neglected in favor of more 'serious' activities…" (p. 455). Unfortunately, this bias is perpetuated to the point that even learners themselves may perceive the use of song in their L2 classroom as a mere 'time-filler' of no educational value, especially if there is no specific task that accompanies listening to the song, and take it as an opportunity to become

inattentive and 'shut off' their language learning focus. Yet a perusal of the literature pertaining to the use of song in the L2 classroom yields a plethora of qualitative evidence from foreign language educators the world over in support of the facilitative effect of song on many aspects of L2 learning. This section examines various language learning theories and presents arguments in favour of song as an application of those language-learning theories.

2.2.1 Suggestopedia

Perhaps one of the best known language learning methodologies to recognize the value of music to the language learning process is Georgi Lozanov's Suggestopedia. Developed in the 1970s, Suggestopedia is based on Suggestology, which Lozanov describes as "a science […] concerned with the systematic study of the nonrational and/or nonconscious influences" (cit. in Richards and Rogers, 1986, 142). In other words, the core focus of Suggestopedia is in recognizing the environmental influences humans are constantly exposed to and redirecting those influences to optimize learning. Among Suggestopedia's most well known facets is its implementation of music directly into the language learning curriculum on the grounds that music is an important contributing factor to language learning. During the final hour of a Suggestopedia class, students engage in a concert session as follows:

> At the beginning of the session, all conversation stops for a minute or two, and the teacher listens to the music coming from a tape-recorder. He waits and listens to several passages in order to enter into the mood of the music and then begins to read or recite the new text, his voice modulated in harmony with the musical phrases. The students follow the text in their textbooks where each lesson is translated into the mother tongue. (Lozanov, 1978, p. 272)

Lozanov provides a list of ideal pieces from the Baroque classical music period, which, according to him, are favoured because of their rhythmic qualities and their ability to sustain the state of relaxation in students that is necessary for the "unconscious absorption of the language materials"

(Bancroft, 1978, p. 172). Suggestopedia's use of music is, however, as a backdrop to the language classroom and promotes instrumental music exclusively, which, therefore, does not take full advantage of the relationship between language and melody. In addition, Suggestopedia facilitates rote memorization as opposed to communicative competence in the L2.[5] Despite these significant drawbacks and the fact Suggestopedia has been largely discredited as a language teaching method, Lozanov's hypothesis concerning the ability of music to lead to the subconscious learning of a foreign language is nevertheless noteworthy and is in keeping with language learning theories that stress the contributing role of affective factors in the language acquisition process.

2.2.2 Affective variables and language acquisition

It is well known to researchers in language acquisition that language learning aptitude, while one of the most important factors involved in the acquisition of a foreign language, is certainly not the only factor. On the contrary, numerous other qualities that are internal to a learner can have a significant impact on the learner's ability to acquire the L2. There are certain affective variables that the literature shows to be related to achievement in the L2. Krashen, for example, developed a number of metaphors to describe these variables and likely the most well-known (and most criticized) of these is the Affective Filter, which he defined as "a mental block that prevents acquirers from fully utilizing the comprehensible input they receive for language

[5] This is perhaps the greatest point of debate concerning Suggestopedia's purpose. Despite attempting to underline that Suggestopedia does more than simply allow for the memorization of large quantities of words, Lozanov meets with much scepticism and criticism by scholars who point out that the vast majority of his positive claims toward Suggestopedia in fact always focus on the participants' ability to reach a state of hypermnesia (the heightened ability to memorize). One of Lozanov's most harsh critics is Thomas Scovel who, in 1979, states the following in his review of Lozanov's book: "[The] innumerable references to experiments on memorization and the recurrent discussions of hypermnesia, to the *total exclusion* of references to 'understanding' and or 'creative solutions of problems' convinces this reviewer at least that suggestopedy, as it is outlined in this book, is an attempt to teach memorization techniques and is not devoted to far more comprehensive enterprise of language acquisition" (pp. 260-261).

acquisition" (1985, p. 3). In other words, the learner is either more or less open to acquisition depending on his/her internal state. Put simply, language acquisition is optimal when Affective Filters are low:

> When [the Affective Filter] is 'up', the acquirer may understand what he hears and reads, but the input will not reach the LAD. This occurs when the acquirer is 'on the defensive', when he considers the language class to be a place where his weaknesses will be revealed. The filter is down when the acquirer is not concerned with the possibility of failure in language acquisition and when he considers himself to be a potential member of the group speaking the target language. (1985, pp. 3-4)

In addition, learners' motivation has been shown to be of crucial importance to their ability to acquire the L2 and ranks second to aptitude as a predictor of success in SLA (Gass & Selinker, 2008). Motivation is a complex concept and has been problematic in the L2 literature because of the various ways in which it has been defined. For instance, Krashen (1983b) posits that motivation can have two effects on the acquisition process: (1) it can encourage input since people who are motivated and have a positive self-image tend to seek and obtain more input; (2) it can contribute to lowering the Affective Filter. However, arguably the most well-known conceptualization of motivation as a social-psychological construct is that of Gardner (1985). In his work on motivation he suggests it has two categories: instrumental and integrative. Instrumental motivation refers to a learner's own needs. For example, a learner might be motivated to learn the L2 well in order to receive a good grade and/or praise and therefore success. Instrumental motivation can also be focused on either the long-term, with the goal of improving social status or job situation for example, or over the short-term, where passing a test or achieving a good grade on an assignment are more immediate goals. Perhaps the most key component of Gardner's theory of motivation is integrative motivation, which, on the other hand, refers to a learner's desire to learn the L2 in order to better integrate into a community or to

better assimilate into a culture. This type of motivation is encountered in situations of migratory contact or it can also be encountered among individuals who are attracted to a particular culture and admire it; it is also tied to a general desire to travel, to be open to other cultures and nationalities, and to meet people of those cultures and nationalities. Finally, intrinsic motivation has also been an important consideration in the literature on motivation. Intrinsic motivation refers to learner-centred reasons for studying an L2; that is, it is a motivation that reflects the innate needs and desires a learner may have for competence and self-determination (Ryan & Deci, 2000). For example, learners may be motivated by the sheer feeling of satisfaction and accomplishment they obtain in studying an L2.

Both Krashen's and Gardner's conceptions of motivation have been criticized for a variety of reasons. Crookes & Schmidt (1991) point out that since motivation is typically linked with learner attitudes, the word motivation has become "a general cover term" (p. 471) referring to a number of distinct concepts that each have distinct origins and effects on learners and should not necessarily fall under the motivation umbrella at all. Additionally, other key reasons Gardner's concept of integrative motivation has been called into question are the unclear distinction between integrative and instrumental motivation as well as the difficulty in defining who the 'target community' is, given the advent of internationally-adopted languages such as 'Global English'. This has called for a re-examination of Gardner's theory that allows for the identification with a "non-parochial, cosmopolitan, globalized world citizen identity" (Dörnyei, 2006, p. 52). Dörnyei (2006) notes that a construct of motivation must also be able to account for the "dynamic character" (51) of motivation and for the daily fluctuations in learners' level of motivation:

> Indeed, even during a single L2 course one can notice that language-learning motivation shows a certain amount of changeability, and in the context of learning a language for several

> years, or over a lifetime, motivation is expected to go through very different phases. (p. 51)

Dörnyei (2006) also proposes that by focusing on associating learners' 'Self System' - learners' perception of the attributes they would like to possess (i.e. hopes, desires, etc.) – with mastery of an L2, this is a means through which motivation to learn the L2 can be heightened. Additionally, the concept of the 'Ought-to L2 Self', which refers to those attributes a learner believes he/she ought to possess and which are, therefore, a kind of extrinsic instrumental motivation, provides the L2 learner with a different kind of motivational focus: that of promotion, which is governed by the learner's belief that the L2 can bring advancement and accomplishment. As such, L2 motivation can be perceived as "the desire to reduce the perceived discrepancies between the learner's actual self and his/her ideal or ought-to L2 selves" (Dörnyei, 2006, p. 54). While there is still much work to be done with respect to clarifying the concept of motivation and identifying what is at its root that can either heighten or diminish it with respect to L2 language learning, what researchers can agree on is that motivation is inextricably linked to learners' individual differences (i.e. personal characteristics such as personality, aptitude, learning styles) and that these differences can be significant predictors of success in SLA.

An additional factor that has an impact on the L2 acquisition process and is closely related to motivation is a learner's level of anxiety. Gass and Selinker (2001) note that anxiety is clearly related to motivation for two reasons: (1) if a learner is not anxious, he or she is not likely to be motivated to make an effort to learn, and (2) a high level of motivation accompanied by little hope of achievement increases anxiety. Social anxiety involves "constructing and/or maintaining a favourable impression upon others" (p. 357) and in a language-learning situation this can involve the instructor, interlocutors, or fellow classmates. Clearly, anxiety can be negative in that it can contribute to a learner's apprehension when faced with the challenge of

communicating in an L2 that he/she may still feel inadequate in using. Fear of being judged by others and low self-esteem can also be factors that contribute to higher levels of anxiety and therefore can have negative consequences on acquisition.

The importance of creating a classroom in which there is low anxiety and positive rapport with the teacher and among other students is crucial to learners' language acquisition success. If this is the case, then what role can song play in fostering an environment where the affective filter of individual language learners is lowered, where motivation is high, and anxiety is low? L2 language educators provide extensive testimony in the form of anecdotal evidence which suggests that song in the classroom contributes significantly to student motivation in addition to lowering anxiety by creating a learning environment in which all students are encouraged to participate and in which language study is no longer a tedious, grammar-focused, and repetitious exercise, but rather a pleasant, relaxed, and fun endeavour. Karsenti (1996) states that "not only do [songs] create a positive climate in the classroom which is essential to learning a second language, they also transport the students to familiar territory where they are more at ease to accumulate knowledge in the second language" (p. 15). Filice and Sturino (1999) also indicate that song has the ability to lower anxiety in students since "learning [language] through songs fosters a pleasant fearless environment where even the most passive and timid learner is encouraged to speak in the foreign language" (p. 24) while Parker (1969) submits that when song is introduced to students "faces light up, and the pupils become excited. Students often forget they are still practicing their language skills and just enjoy themselves" (p. 95). In addition, educators generally seem supportive, if not outright enthusiastic about the positive results they have observed in both their students' path to L2 language learning and in their level of motivation as a result of exposure to songs in the classroom. Students too have also responded favourably to this technique. In a questionnaire distributed to her adult students of L2 Japanese,

Jolly (1975) notes that "many students indicated that the songs created a relaxed and enjoyable atmosphere in the classroom and livened up the pace of the lessons; others felt relieved from the usual tedium of the classroom and resultantly more receptive" (p. 13). Some educators even note a 'trickle effect' in the positive attitude of learners toward learning in general, resulting from the introduction of songs to the curriculum, illustrating that once learners are excited about learning the language, they are usually keen to venture to the study of other subjects as well. According to Leith (1979), "once a genuine interest in the language can be kindled, the fire may spread to literature" (p. 539), thereby providing the impetus to explore other aspects of the target language such as literature and culture.

2.2.3 Input and the language of pop songs

Perhaps one of the most widely studied aspects of SLA is the role of input in the acquisition process. One of the main arguments to emerge from research into input is that in order for acquisition to take place, the key ingredient that must be present is comprehensible input. [6] That is, the learner must be exposed to input that is at or slightly above the learner's level of competence in the language. This hypothesis suggests that learners are able to comprehend messages in the L2 containing unacquired grammar (and presumably vocabulary as well) with the help of contextual clues that allow the learner to extract extra-linguistic information from the input and to utilize his/her previously acquired linguistic knowledge and knowledge of the world. As evidence supporting this theory, language registers described as 'caretaker talk' or 'motherese', along with 'teacher talk' and 'foreigner talk' are types of language that are characteristically simplified and charged with affective meaning, meant to provide the learner with as much comprehensible input as possible in a communicative way.

[6] Krashen defined acquisition as "a subconscious process for developing ability in language via the language 'mental organ' (Chomsky, 1975)" and which "requires comprehensible input" (1985, p. 100).

With respect to pop song lyrics, Murphey and Alber (1985) proposed that there exists a pop song register concerning the type of language found in pop songs and that this register could be considered the "motherese of adolescence" (1985, p. 794; Murphey, 1992, p. 770) as well as a type of "affective foreigner talk" (1992, p. 771) as a result of the simplicity and affective nature of the language utilised. Murphey's in-depth analysis of the discourse of pop songs (1990a) reveals that the language of pop songs is repetitive, conversation-like, and approximately half the speed of spoken discourse, making it analogous to the type of comprehensible input children and L2 learners are exposed to and which is necessary for language acquisition. According to Murphey's analysis of the frequency of words in a corpus of 50 English pop songs (1992), there is a mean words-per-minute speed in the pop songs of 75.49 or "about half that of normal speech" (p. 772). Murphey goes on to say that this slowed 'discourse' is comparable to the spoken discourse between an L2 learner and a native speaker and that for this reason pop songs allow the listener to relate to the context of the songs:

> It is not so much that songs are slow, although some are, but rather that they have frequent pauses. The pause structure would seem to invite listeners to respond, if not with their own words, then at least with an echo of what they just heard. The frequent calling to you also encourages audience participation in the enunciation, contextualization, and meaning making of the song. The pauses and slow rate may allow listeners to search for referents in their own contexts, internally or externally, an activity that deepens appropriation. (1992, p. 772)

Thus, based on the results of analyses of the language commonly employed in pop songs, which conclude that pop song lyrics can provide learners with comprehensible input, in addition to the abundant literature attesting to the fact that the use of song in the classroom lowers learners' anxiety levels and raises motivation levels, it is clear that the use of song in the L2 classroom can provide a number of benefits to the learner in his or her quest for language acquisition.

2.2.4 The LAD, the Din, and the Song Stuck in My Head Phenomenon

In the 1950s, Chomsky's work in linguistics brought to light theories of language acquisition that harshly criticized and attempted to discredit those of the preceding Behaviorist school. Unlike the behaviorists, Chomsky posited that the human brain is not a *tabula rasa* that is entirely dependent upon environmental conditioning, but rather that all humans possess an innate, biological matrix that predisposes them to the process of language acquisition. In keeping with his theory, Chomsky put forward the concept of the LAD (Language Acquisition Device), defined in general terms as a mental depository innate to all humans, capable of regulating the process of acquisition. In order for language acquisition to take place, one must activate the LAD through the process of discovering how a particular language functions together with uncovering the universal principles that are already present in the brain.

In subsequent decades, scholars such as Murphey (1990b) and Krashen (1983a) attempted to illustrate that the LAD was closely related to another language acquisition concept, the 'Din' phenomenon. Elizabeth Barber was the first to suggest the concept of the Din anecdotally in a 1980 account of her experience with language acquisition and use during a trip to Russia:

> By the third day also, the linguist in me was noticing a rising din of Russian in my head: words, sounds, intonations, phrases, all swimming about in the voices of the people I talked with. […] The sounds in my head became so intense after five days that I found myself chewing on them, like so much linguistic cud, to the rhythm of my own footsteps. […] Nonetheless, my overall command of Russian improved more in a single week than it would have in a month or two of intensive reading. (cit. in Krashen 1983a, pp. 41-42)

The Din can be defined, then, as the involuntary rehearsal of a foreign language in one's mind (Murphey 1990a, p. 53). However, Krashen argued that language acquisition could only take place when there was comprehensible input; that is, when the language learner was exposed to

structures of the language that he or she understood. In other words, the language learner has to grasp the *meaning* of the message and not its form in order to acquire the language so the simple 'dinning' of a language in one's mind is not enough for language acquisition to take place (Krashen, 1982, p. 21). Based on the concepts of the LAD and the Din, Krashen hypothesized that the Din actually results from a stimulation of the LAD. That is, when a language learner is exposed to comprehensible input, this input will 'sound' over and over again in the learner's head, activating the LAD which then allows the input to become embedded in the learner's brain, and therefore language acquisition has taken place.[7] It has been suggested, however, that the Din phenomenon may actually be the internalization of egocentric speech as conceived by Piaget, and later built upon as 'inner speech' by Vygotsky. Piaget maintains that children involuntarily repeat words and phrases "for the simple pleasure of speaking without any concern for an addressee" (cited in Murphey 1990a, p. 109) and that this type of language disappears after the child reaches the age of six or seven. Vygotsky claimed that egocentric language does not disappear, but rather gradually develops into inner speech and therefore merely becomes less vocalized. Therefore, the Din, like inner speech, is an internalized language that is 'spoken' or rehearsed repeatedly in the mind and which deals primarily with the semantic content of words as opposed to their form. Studies by Postovsky (1974) and Kadota (1987) suggested that listening activities prior to reading and production activities are more efficient since the LAD is triggered by listening, which in turn activates a Din leading the learner to 'chew' on elements of the language, which eventually leads to comprehension and finally acquisition. This scenario

[7] Krashen also posited that the Din phenomenon ceases to manifest itself in more advanced learners since they have acquired most of the target language, though this hypothesis has not been verified and in fact has been contested by Murphey (1990a).

posits that eventually the Din contributes to reading and finally to production. Murphey (1990b) drew important conclusions based on this premise:

> [Our] LADs may be performing somewhat cyclical processes of involuntary rehearsal on our way to increasing use of language: we listen to develop prosody in order to be able to read and speak more efficiently, and then we can read to listen to ourselves subvocally "use" words which may be echoed in the Din and which are transformed into further potential output. (p. 58)

But how does song relate to the preceding discussion of the LAD and the Din? Interestingly, Murphey coined a phenomenon in which song has a direct influence on the language acquisition process through its activation of the LAD by generating a song Din. Known as the Song-Stuck-In-My-Head phenomenon (SSIMH), this type of Din is the involuntary rehearsal of a song in one's mind and, according to a study Murphey (1990b) conducted in Switzerland, it is a widespread and common occurrence. From the catchy jingle of a television commercial to the last song one hears on the radio in the morning, the SSIMH phenomenon provides telling evidence that song is closely related to the Din phenomenon, only rather than mere words being rehearsed in the mind, these words are reinforced by a melody. Murphey's work with respect to the SSMIH phenomenon led him to conclude that song might in fact be able to trick the LAD into a Din mode, thereby indicating that "if involuntary rehearsal is the humming of the efficient LAD, music and song may initially play an associative facilitating role in engaging and stimulating [the LAD]" (1990b, p. 61). In other words, when a song is 'stuck' in one's head (i.e. the Din mode) it activates the LAD and allows the learner to acquire aspects of the target language involuntarily. Both the LAD and SSMIH concepts lend themselves to the application to psycholinguistic work undertaken on memory, and more specifically on how language is stored in the mind. Baddeley (1995), Baddeley, Papagno & Vallar (1988), and Gathercole & Baddeley (1990) suggested that the human brain consists of a 'phonological loop', a secondary

memory store responsible for the processing and storage of phonological information. This 'phonological loop' requires continual articulatory rehearsal of the phonological information, that is, repetition of the information either subvocally or vocally, in order for that information to be both maintained in the mind's short-term memory store as well as consolidated in the long-term store. This suggests that the SSIMH phenomenon might in fact be the rehearsal that takes place in the phonological loop, a construct that will be discussed in greater detail subsequently in section 3.8.

2.2.5 Language and Neuroscience

Increasingly over the past four decades, studies in language learning have turned to the neurosciences in an attempt to better understand the brain's role in processing language. Understanding this role can be an invaluable tool in that it may permit greater awareness of what a second language learner's brain does with the information it receives in the foreign language and this can have an important impact for future research in SLA. In addition, findings could have significant implications for language educators in that their pedagogical practices should be crafted carefully in order to optimize the cognitive processes learners carry out as they acquire the L2.

In its very early days, research in neurology led to the general conclusion that specific parts of the human brain are responsible for specific human functions. In the mid nineteenth century, French anthropologist and neurologist Paul Broca conducted studies on the brains of aphasic patients. Aphasia is a neurological condition that causes partial or total loss of the ability to articulate sounds or comprehend spoken or written language as a result of injury or disease to the brain (Peretz & Zatorre, 2003). Broca noticed that all of the aphasic patients in his studies presented with the same destructive lesions in the frontal lobe of their brain's Left Hemisphere

(LH henceforth). This was the first time anyone had correlated a specific area of the brain to a specific cognitive function, in this case, language. Broca's findings led to this part of the brain becoming known as Broca's Area and it was for many years considered to be the seat of language. Despite the fact that Broca's discovery was groundbreaking, it also contributed to the general acceptance among scholars that the brain's capacity for language processing is localized solely in the brain's LH. Long considered the more dominant or important hemisphere for its seemingly superior ability to perform analytical and logical tasks, most scholars took Broca's findings as confirmation that the brain's Right Hemisphere (RH henceforth) is, therefore, a 'weaker' or 'minor' hemisphere whose participation in higher cognitive functions is limited. However, this hypothesis, which came to be known as the Cerebral Dominance Theory, was not supported by all and those whose intuition ran counter to it attempted to illustrate through further research that it was highly improbable that one hemisphere of the brain alone could bear the entire cognitive load of language processing. They claimed that even if a particular cognitive function originates in a specific area of the brain, that function's overall manifestation must involve other sites in the brain as well.

In the 1950s, it was the American psychologist Roger Sperry who finally put an end to the Cerebral Dominance Theory as a result of the work he and his associates conducted on split-brain patients. These were patients who suffered from epilepsy and had had their two hemispheres surgically separated via the corpus callosum in an attempt to attenuate their seizures. This procedure permitted Sperry to isolate each of the brain's hemispheres and thereby examine the effects of visual or audio stimuli on each individual hemisphere in isolation. A visual or audio stimulus to the right eye or ear produced LH brain activity while the same stimulus to the left eye produced activity in the RH. Sperry's experiments showed unequivocally that both the brain's hemispheres participate in higher cognitive functions, not just the LH and

that the two work as a unit in processing information. Indeed, Sperry's findings indicated that the brain's hemispheres are not differentiated in the *types* of functions they process but rather in the *aspects* of functions they carry out. In other words, both the brain's hemispheres are involved in language processing, but each hemisphere is specialized in carrying out processing of a specific aspect of language, for example morphology versus figurative language. Recent neurological studies on patients with lesions in either the LH or RH lend further support to these assertions by highlighting the particular impairments that result from these lesions on very specific aspects of certain cognitive functions (see e.g., Patel, Peretz, Tramo, & Labreque, 1998; Peretz & Zatorre, 2003).

What specific conclusions can be drawn about language processing from research in the neurosciences? The literature suggests that the LH is responsible for analytical tasks related to language processing whereas the RH is responsible for more holistic or experiential tasks, both types of which are essential for producing and receiving messages. As Danesi (1987) posits, "the left hemisphere allows us to analyze and understand the individual concepts and items that make up linguistic structure, while the right hemisphere is involved in the crucial task of putting the 'bits and pieces' together into discourse 'wholes'" (p. 380). These complementary functions are more clearly outlined in Figure 1:

Figure 1: The Human Brain's Hemispherical Traits with Respect to Language Processing

L-Mode Traits	R-Mode Traits
most speech functions	understanding figurative language
deciphering meaning	understanding visual relations
verbal memory	spatial memory
intellectual tasks	intuitive tasks
convergent thinking	divergent thinking
abstracting	concretizing
directed thinking	free thinking
analytical thinking	relational thinking

linear thinking	multiple thinking
analyzing parts	synthesizing parts.

(*adapted from Danesi, 1987, p. 380*)

Additionally, the literature indicates the following complementary modal functions:

Figure 2: Modal Functions of the Human Brain

L-Mode	R-Mode
-infers rules of syntax and morphology, and determines sentence implication	-processes prosodic structure (pitch, intonation, stress, etc.)
-relates syntactic and semantic information in pronoun replacement	-determines whether the utterance is a statement, a condition, a command, or a question
-repeats stylistic variants	-determines figurative meaning
-detects and corrects surface-structure errors	-understands linguistic humor

(adapted from Danesi, 1987, pp. 380-81)

But how can the preceding discussion about the human brain shed any light on a field such as second language pedagogy and how can this relate, if at all, to the use of song in the language classroom? Although, as indicated earlier, scientists and researchers have only just begun to uncover the many complexities of cognitive processing, the information currently available about the brain's processes suggests that language acquisition involves the brain as a whole and therefore, in order for language pedagogy to be effective, it must reflect this physiological fact:

> It is now thought that although each hemisphere may be specialized to process information in certain ways, it is not limited to that processing mode. More specifically, the left hemisphere appears to be able to engage in some holistic/parallel processing, and the right hemisphere appears to be able to engage in some analytic/serial processing. Thus, according to this perspective, the two hemispheres are not completely dissimilar with respect to the tasks they can perform. […] (Genesee, 1988, p. 85)

This implies that any instructional approach that privileges one hemisphere over the other will not likely lead the learner to an advanced level of proficiency in the target language. Danesi,

who has been at the forefront of research melding discoveries in the neurosciences with second language pedagogy, advanced a method of language teaching that he termed 'Bimodality.' This method, in essence, outlines how instruction in the second language classroom can and should reflect the bimodal manner in which the brain processes language by suggesting foreign language educators implement a pedagogical strategy he calls the Modal Flow Principle (2003) that is aimed at first triggering in learners those language functions that originate in the RH and then moving to targeting those functions that that the LH is more specialized in carrying out. In this way, Danesi submits that foreign language educators and those developing pedagogical materials for the foreign language classroom would be optimizing students' language learning.

As outlined previously, experiential learning entails RH involvement because it allows the learner to explore new structures and concepts in his or her own way through orientation tasks. As such, songs are an excellent source of experiential learning for the very reason that they introduce the learner to new words, concepts, and structures that are normally highly idiomatic and as such, may be a medium through which to activate the RH. In addition, just as any literary text, songs present language in context and therefore, the learner must think about the meaning of the message, allowing "the R-Mode to activate the crucial operation of synthesizing the discrete points to be learned into functional wholes. In other words, it is essential to make sure that the learner is frequently involved in thinking about what the target language data is about […]" (Danesi, 1987, p. 384). In addition, the principle posits "a more physical, sensorial, and contextualized teaching style for novel learning tasks" (Danesi, 1991, p. 22) that aims to make new material comprehensible to the learner and thereby supports the use of a variety of contexts (visual, aural, kinaesthetic) to make learning more effective. Song undoubtedly fits well into this format since through the combination of lyrics and melody, it offers learners a sensorial experience as well as one rich in semantic context. Once the learner has been given the

opportunity to focus on activities that allow the RH to attend to the novel information, the instructor can then orient the students towards activities that allow the LH to encode the new information schematically, such as focusing on more discrete grammatical aspects of the song lyrics. [8]

While Danesi's theory underlines the importance of recognizing the many varied and complementary functions of the human brain's right and left hemispheres, Paradis (1985, 1990) cautions that there is no guarantee any technique adopted in the L2 classroom with the purpose of stimulating a particular hemisphere will necessarily result in processing within that hemisphere. He also points out that a one-size-fits-all approach to language instruction is undesirable since learners each possess different cognitive styles that are either more or less suited to the functions of one hemisphere or the other. Instead, he suggests, the focus of L2 instruction should be on involving the brain in its entirety:

> What does seem desirable is to involve the whole brain, both cortically and limbically. [...] The involvement of the whole cortex should not be undertaken to increase right or bilateral cerebral representation of language, but to take full advantage of the learning strategies characteristic of both hemispheres (for example, now focussing on voice quality and melody, now on the sequentiality of the sounds; now on the overall meaning, taking advantage of the redundancy of both linguistic and situational contexts, now on the syntactic-semantic underlying relationships among words. (1985, p. 13)

Hence, the implementation of any task in the L2 classroom, while not necessarily able to stimulate processing in one specific hemisphere alone, should be conceived of in an effort to exploit the processing capabilities particular to each hemisphere. As such, while utilising song in the L2 classroom may not necessarily stimulate language processing in the RH, it nevertheless

[8] It is extremely difficult to conclude with certainty that specific classroom activities activate either one hemisphere or the other. As Danesi has rightly pointed out, "it is risky to claim that a given technique X is to be defined as R-Mode, while another one Y is to be defined instead as L-Mode. […] [The] only legitimate neuroscientific manner for doing this is by means of some appropriate laterality assessment method" (1991, pp. 24-25).

may provide an opportunity for both the brain's hemispheres to participate in processing those aspects of the song that are reflective of their respective capacities (e.g., idioms in the RH and syntax in the LH).

2.3 Melody, lyrics, and recall

The unique combination of language and music that is song raises some rather important questions about how music and language are stored in memory. Are a song's melody and its lyrics stored separately in memory or rather are they integrated into it as an inseparable unit such that the retrieval of one depends on the cueing of the other? To what extent can melody provide informational cues about the accompanying lyrics? Do lyrics and song have an influence on each other to the extent that the one exerts a physical change on the other, making the two theoretically separate components highly integrated in the memory? Perhaps the question that is most germane to this study asks whether a melody in and of itself can facilitate the recall of text or whether simply any text that is rehearsed in a rhythmic way can be recalled as easily as a song? That is, is there something special about song that allows for the easy cue of and retrieval of lyrics? In order to answer these questions, it is necessary to understand how melody and language are stored in the memory. Bartlett and Snelus (1980) conducted a study in which they examined long-term memory for popular songs based on participants' familiarity and time-of-popularity judgments on a number of popular songs from the period 1921 to 1974. They hypothesized that a particular song's melody would cue lyric recall better than merely the song's title. Results of the study support this hypothesis in showing that in fact, participants better recognized songs as familiar when participants were cued with the melody rather than when cued with the song's title only. Rubin (1977) also found that participants were better able to recall the lyrics to "Star Spangled Banner" when they were cued with the song's melody than without a

cue. Despite the fact that these studies seem to indicate that melody is a better retrieval cue than either no melody or only the song's title, the songs utilised were well-known to the participants and therefore they had ample opportunity to learn the songs' melody and text and to rehearse both. As such, a further question should ask whether a previously unknown song can also provide evidence for the greater influence of melody on cued recall than no melody or lyrics only? Also, if the lyrics of the songs utilised in these studies had been learned in the absence of a melody, could they have been as equally well learned and recalled? These studies, while providing convincing evidence of the impact of melody on the recall of lyrics, still do not provide answers as to whether or not melody is the only factor at play in the recall of lyrics or whether other factors inherent to the texts themselves are what facilitated the recall. Past research investigating whether previously unknown songs are better recalled when they are presented in the form of their original presentation (i.e. original melody with original lyrics) rather than when they are presented with either a new melody and old text or an 'old' melody with a new text show novel melodies are in fact better recalled when presented in their original form rather than when they are presented in mismatched form or when lyrics are accompanied by a different melody from the original presentation (Crowder, Serafine, & Repp, 1990; Serafine, Crowder, & Repp, 1984; Serafine, Davidson, Crowder, & Repp, 1986). This interaction between a specific melody and a specific text is referred to as the *integration effect*, reflecting the close relationship that exists between a melody and its accompanying text. Although this research seems to show that melody does in fact play a significant role in the recall of a song's lyrics, the main lacuna in this research is that it still does not show that the melody itself is the variable that is facilitating the recall. If images had been substituted for the melody, causing the lyrics to co-occur with them instead of with a melody, would the results be the same? That is, is co-occurrence really the variable that is facilitating recall and not necessarily either a melody or images or any other

specific pairing? In other words, does recall depend solely on the pairing of two elements, regardless of what those elements are?

In order to be able to determine whether melody really is (or is not) at the heart of facilitating lyric recall, it is helpful to turn to Crowder, Serafine, & Repp (1990) who argued that not only do melody and lyrics interact so closely that each can act as a cue for the other, but that in fact, the one element exerts subtle physical changes on the other element, making the latter different from what it would be with a different pairing. This *physical interaction hypothesis* posits that when a song is sung with specific lyrics, those lyrics impose subtle effects on the melody to the point that the acoustic properties of the notes (their onsets, their duration, and even their timbres) undergo a change. Crowder, Serafine, and Repp (1990). coined these effects *submelodic* because while the pitches and durations remain unchanged in the printed score itself, the way in which the actual singing of the song is carried out is unique as a result of the combination of a specific text and its melody. This implies, then, that a melody that is sung with a particular text is in fact a slightly different melody from the same printed melody accompanied by a different set of lyrics. In order to test this hypothesis, Crowder et al. created nonsense song lyrics to accompany melodies. The nonsense lyrics were derived by maintaining phonetic similarity to the original lyrics. Vowels were left intact and consonants were changed to close phonetic neighbours. In this way, if the submelodic effect were in fact correct, they hypothesized that in spite of the lyrics being nonsense lyrics, the integration effect should still be obtained. In other words, participants should still be better able to recognize a melody paired with a set of meaningless lyrics than a melody presented with equally nonsensical words but that had been heard previously paired with a different melody. Results of the experiment show a main effect of melody-text combination on recall, providing evidence that the integration effect does indeed occur with nonsense syllables, implying that lyrics, whether meaningful or nonsensical, do cause

changes in the submelodic aspects of a melody and that those changes are retained in the memory.

Wallace (1994) carried out one of the most thorough examinations of the role song plays on the retention of lyrics in her study of undergraduate business students and their ability to recall the lyrics of a number of songs from the ballad tradition. Wallace hypothesized, like Crowder et al. (1990), that a song's melody in and of itself facilitates recall of the lyrics even when the lyrics by themselves contain rhythmical and rhyme features. In addition, she posited that melody acts as a direct link between specific components of the melody and specific components of the text, a link which then acts as an access point or cue to memory. This implies that "thinking about some component of the melody will cue the parallel component of the text" (p. 1472). Wallace elaborates on this suggestion by pointing out that recalling a melody means that the subject is then able to extrapolate from that melody some of the features of the text: the length of the text accompanying a particular musical phrase, the number of syllables that form that phrase, and how many stressed syllables there are in the phrase. This means that if a subject cannot recall some portion of the text readily, then, thanks to the structural information provided by the melody, the missing text can be reconstructed based on this information. However, Wallace also pointed out that it is not merely the co-occurrence of melody and text that makes the text better recalled, but rather it is the gamut of information provided by the melody and the "richness of the interaction in that co-occurrence as well as the constraints provided by that interaction" (p. 1473) that lead to better recall. Wallace's experiments sought to verify this hypothesis by presenting 64 participants with verses of a ballad previously unknown to the participants that are either spoken or sung a total of five times, and then asked to recall in written form the text they had heard after the first, second, and fifth presentations. As a distraction, subjects were also presented with a second ballad and the same procedure as for the first ballad

was followed. The time between recalling the first ballad on the fifth trial and the delayed task was 20 minutes. Results of the experiment showed that those participants in the sung condition outperformed those in the spoken condition. Additionally, participants in the sung condition attempted recall of more lines than those in the spoken condition. Those in the sung condition also indicated better awareness of the verse structure by pointing out line breaks more accurately and demonstrated better indication of omissions both in terms of number of words or lines. This heightened awareness of the text, Wallace posited, is possibly due to the fact that the melody encodes the text in specific ways. One possibility is that the melody allows for the distinction between a particular verse and others by making each verse a "coherent unit" (p. 1475). A second possibility is that melody may act as a type of frame that cues subjects to seek lines that fit the whole frame, resulting in less chances of omitting a line. A third possibility is that the melodic structure provides information about the nature of the text and its organization such as number of syllables in a line, stress pattern of a line, number of lines in a verse, and where verses begin and end. As a fourth possibility, melodic contour (the pattern of ascending and descending pitches in the melodic line) sequences lines and verses and links individual lines with each other. A fifth and final possibility that Wallace submitted as an explanation for the effect melody has on text recall is that this same melodic contour along with accents and tone may also make particular components of each verse more salient, thus rendering them more memorable.

Wallace's study along with those of Bartlett & Snelus (1980), Crowder, Serafine, & Repp (1990), Rubin (1977), Schön et al. (2008), and Serafine, Davidson, & Crowder (1986) provide compelling evidence suggesting the unique combination of words and music that constitutes song can exert influence on textual recall such that lyrics are better recalled when they are sung than when they are simply spoken. Such evidence informs the present study in the examination

of the influence of song on the acquisition of the L2 lexicon and is at the core of the hypotheses that will be examined in Chapter 4.

3 Second language vocabulary acquisition literature review

"The lexicon may be the most important component for learners."

(Gass & Selinker, 2008, p. 449)

From its very beginnings as a legitimate, autonomous field, gains in SLA research were made, for the vast majority, in the area of grammar, syntax, and phonology since these aspects of language were largely prioritized as "more serious candidates for theorizing" (Richards, 1986, p. 77). Only in the last 20 years or so has research in vocabulary acquisition begun to flourish thanks to a burgeoning number of experimental studies and pedagogical material being published, a trend that has made it rather challenging to keep up with the latest advances in the field. As Cheryl Boyd Zimmerman (1997) notes, "vocabulary is central to language and of critical importance to the typical language learner" (p. 5) and in recent years, research in vocabulary acquisition has thrived, highlighting the important role it plays in both native and non-native language acquisition, particularly in the early stages of the acquisition process. Not surprisingly, researchers now underline the fact that language learners cannot communicate meaningfully without mastery of a second language's lexicon. McCarthy points out that "no matter how well the student learns grammar, no matter how successfully the sounds of the L2 are mastered, without words to express a wider range of meanings, communication in an L2 just cannot happen in any meaningful way" (1990, p. viii). Vermeer (1992) goes on to say that "knowing words is key to understanding and being understood. The bulk of learning a new language consists of learning new words. Grammatical knowledge does not make for great proficiency in a language" (p. 147). Yet despite the fact research in vocabulary acquisition was

rather slow in its initial progress, learners of second languages, it seems, have long recognized the importance of the lexicon to their journey towards mastery of an L2. Nation (1990) notes that "learners feel that many of their difficulties in both receptive and productive language use result from an inadequate vocabulary" (p. 1). Ellis (1997) also points this out:

> Learners don't care about linguists' analyses of language. They don't care about grammar or whether words or morphemes are the atomic units of language. From a functional perspective, the role of language is to communicate meanings, and the learner wants to acquire the label-meaning relations. (p. 122)

Indeed, learners typically want to familiarize themselves with as many words in the target language as possible and in so doing they seek out patterns in the language they are learning. However, language learners often feel understandably overwhelmed by the formidable task of learning the thousands of words required of them if they are to communicate effectively in the L2. Similarly, language educators are faced with significant challenges when it comes to the task of vocabulary instruction for the very simple reason that selecting which lexical items are to be included for instruction, in addition to choosing the best approach to adopt in teaching those items, are challenging issues. Some of the questions preoccupying second language educators and researchers alike include the following: How many words should a beginner language learner be expected to know at the end of a typical introductory course? Should learners be given explicit definitions of words? What is the effectiveness of presenting the lexicon in word lists with L1 equivalents? What of the role of context on lexical acquisition? How many exposures to lexical items do learners require in order for acquisition to take place? Can vocabulary instruction facilitate lexical acquisition? Despite the fact that these and a great deal many other questions related to second language vocabulary learning and teaching have been raised in the recent SLA and psychological literature, they nevertheless remain contentious since there is, as yet, no formal model of vocabulary acquisition that would allow both researchers and

language educators to make predictions about the lexical acquisition process and to then test these predictions against what actually occurs in real life situations (Meara, 1997). A formal model would also bring much-needed consensus with respect to the terminology currently used to refer to concepts related to lexical acquisition and would, therefore, eliminate the confusion that often results from the use of vague and/or loosely-developed terms. For instance, what exactly do we mean when we refer to a 'word'? What do we mean when we say a learner has acquired a lexical item? Are we referring to productive knowledge or receptive knowledge or both? Meara (1997) concludes that the development of a formal model of vocabulary acquisition would not only influence the way in which researchers think about language, but that it would also have a significant impact on the way in which lexical instruction takes place in the classroom:

> The important point is that the types of questions we ask are largely determined by the types of models that we work with. The effect of language models also filters down to the classroom. The way we think about language (largely determined by the models we use) governs the type of textbooks which get published and the types of methodology advocated by teacher-training institutions. Thus, current models influence not only researchers and academics, but the everyday classroom teacher as well. (p. 121)

Until such a universal model is developed, it is imperative that research in lexical acquisition continue to be carried out and this implies utilizing existing models that may exhibit significant lacunae. However, by taking care to place clarity of terminology at the forefront of this exploration, progress in the area of second language lexical acquisition will certainly be made.

In this chapter, important intralexical, interlexical, and cognitive factors that affect the learnability of the L2 lexicon will be examined in the context of understanding how these factors play a role in learners' acquisition of the L2 lexicon. In subsequent

sections, various theories of lexical acquisition will be discussed in the context of their application to the present study.

3.1 Criteria affecting word learnability

Before examining the various criteria that influence whether a learner is likely to acquire certain L2 lexical items with relative difficulty or ease, it is critical to clearly outline what it is we are referring to when we say a learner has 'learned' a word. This clarification is central to any discussion of lexical acquisition since, as mentioned above, there are various ways of defining lexical knowledge. Ellis (1997) highlights the myriad processes involved in learning a word, underlining the complex nature of lexical acquisition:

> To understand speech, the auditory input lexicon must categorise a novel sound pattern […]; to read the word the visual input lexicon must learn to recognize a new orthographic pattern […]; to say the word the speech output lexicon must tune a motor programme for its pronunciation; to write it the spelling output lexicon must have a specification for its orthographic sequence. We must learn its syntactic properties, its referential properties, and its roles in determining entailments […]. We must learn the conceptual underpinnings that determine its place in our entire conceptual system. Finally, we must learn the mapping of these Input/Output specifications to the semantic and conceptual meanings. (p. 123)

In much of the SLA literature on lexical acquisition, there are generally two types of learning that are distinguished: 1) learning a word's form (i.e. its lexical specification, collocations, and grammatical class information) and 2) learning a word's semantic and conceptual properties, which includes mapping the word form label onto existing meaning representations. As part of these aspects of learning, researchers (e.g. Nation, 1990) distinguish between receptive and productive learning.[9] Receptive learning involves a learner's ability to recognize a lexical item

[9] The terms 'receptive' and 'productive' are also referred to in the literature as: active and passive, comprehension vs. production, understanding and speaking, recognitional and actual/possible.

and to recall its meaning when it is encountered. It also includes being able to distinguish a word from synforms,[10] being able to determine whether the word sounds and looks right, having expectations of the grammatical patterns the word will occur in, and discerning the pragmatic usages of the word. Productive knowledge, by contrast, involves all that is needed to attain receptive learning in addition to the ability to speak or write the required lexical item at the appropriate time. It is also important to note that lexical acquisition should not necessarily be understood as an all-or-nothing venture, an event that takes places on a horizontal continuum whose end points are defined as 'receptive knowledge' and 'productive knowledge' (Meara, 1997). Rather, vocabulary learning may, in fact, in many cases only be partial, suggesting that vocabulary knowledge should instead be seen as the result of a cumulative process. For example, a learner may have mastered some of a lexical item's properties and not others but is perhaps able to discern the meaning of that lexical item in context while being unable to use that lexical item productively. This scenario entails that the learner has nonetheless achieved some level of learning and for this reason, it is crucial, as Meara (1997) notes, that we think about the lexical acquisition process as consisting of "building a connection between a newly encountered word and a word that already exists in the learner's lexicon. The connection could be a link between the new L2 word and its L1 translation or it could be a link between the new L2 word and an already known word in the L2" (p. 121).

Why is it that some words are more difficult for L2 learners to acquire while others seem so easy to 'pick up'? Is there some inherent aspect of words that makes them either difficult or

[10] 'Synformy' refers to lexical forms in a language that share certain characteristics such as number of syllables, position of syllables, stress patterns, root, suffix, prefix, phonemes, etc. In other words, synforms are lexical items that, as a result of their equivalence or similarity in some feature, can cause L2 language learners to use the one in place of the other. For example, the Italian *pazzo* (crazy) and *pezzo* (piece), whose referents are clearly unrelated semantically, could be considered synforms since they differ in only one phoneme/grapheme, resulting in a possible source of confusion for Italian L2 learners.

easy to learn? The answer to these questions has important implications for our understanding of the language learning process as well as for the way in which educators approach vocabulary teaching. Researchers (e.g. Laufer, 1997) have pondered these very questions and have examined factors that are intrinsic to a language itself (i.e. intralexical factors[11]), factors that depend upon the relationship between the individual learner's L1 and the L2 he/she is acquiring (i.e. interlexical factors). In addition to the interlexical/intralexical dichotomy, there is also a range of other factors related to cognition (i.e. related to the learners' cognitive processes themselves) and to external forces (e.g. input) that also come into play in terms of affecting the process of L2 lexical acquisition. The following sections examine in detail some of the most important factors affecting the learnability of lexical items.

3.2 Intralexical factors

3.2.1 Frequency

Frequency counts have, over the course of the last century, served as a guide to language educators in helping them to discern which lexical items should be the focus of time and attention in the language classroom in an attempt to help them manage and, in most cases, reduce the vocabulary load (e.g. Ogden, 1930; Thorndike and Lorge, 1944; West, 1953; Coxhead, 2000; British National Corpus, 2007). These frequency counts have provided language educators with a sense of which words could be most useful to acquire in a language and they have also influenced the selection of texts for reading assignments in addition to impacting how the lexicon is tested in the classroom. Finally, frequency counts have also given educators and researchers a general idea of how many words learners of a foreign language should aim to acquire (i.e. vocabulary size) in order to possess a lexicon comparable to that of a native speaker. However,

[11] Intralexical factors are those properties, related to a word's form, meaning, and usage that are intrinsic to a word and/or to a particular language and which may affect its learnability.

over time, it has become clear that there are some significant problems with frequency counts, namely due to the lack of uniformity both among the creators of these frequency counts (and consequently among researchers who apply them) with respect to the criteria utilised to measure frequency, the sources of language from which the frequency counts were being taken, and whether or not breadth of language was taken into account (see Nation, 1990), making it difficult to ascertain which frequency counts are truly representative of native speakers' language usage. Thus, it is essential to ask specific questions about the method of data collection used to compile a frequency dictionary when considering utilising one: What are the needs of the learners? What is the range of vocabulary that is considered in the count?[12] How is frequency actually calculated? Does the frequency list distinguish between word type and word token?[13] How are multi-word items and idioms (e.g., fare brutta/bella figura) counted? As an example of the sort of discrepancy that exists among frequency lists, one frequency list may consider 'rapid' and 'rapidly' as two separate word types while another might consider them as one type since they are part of the same word family. Also rather problematic is the fact that some publications utilise only written materials as sources from which to measure frequency while others rely both on written and oral sources. Written language generally contains a higher proportion of low-frequency (i.e. unfamiliar) words than does oral language, rendering a comparison of frequency counts from the two different sources problematic. Furthermore, although numerous researchers advocating the use of frequency counts have argued that the first 1,000 or 2,000 words should appear in those frequency counts, they have not taken into account some very important

[12] Range refers to the number of different types of texts in which a word occurs. For example, a frequency dictionary that considers texts from a wide variety of sectors (e.g. business, literary, popular culture, film, etc.) rather than focusing on a limited number of sectors provides a more complete picture of the way in which a language is actually utilised and therefore, provides a more accurate frequency count.

[13] 'Type' refers to an abstract concept while 'token' refers to specific instances of that particular type. For instance, the sentence 'A rose is a rose is a rose' contains 3 types (a, rose, is) and 8 tokens, including 3 tokens of 'a', 2 tokens of 'is', and 3 tokens of 'rose'.

considerations: certain useful and important words in a given language do not necessarily occur in those first 1,000 or 2,000 words while others that are perhaps not suitable for the beginner learner do in fact occur at those frequency levels. For example, if a frequency count utilises written business letters as a source for its frequency count, then there is the possibility that words utilised often in a business setting appear in the first 1,000 most frequent words. However, the beginner learner of a language will likely not encounter or need to make use of vocabulary related to the business sector in the early stages of language learning (Nation, 1990). Consequently, frequency counts, though not completely without merit, should not be utilised as the sole criterion for teaching vocabulary and should be approached with a certain degree of caution.[14]

Another aspect of frequency that merits attention involves the frequency with which a learner is exposed to certain lexical items through the input he/she receives either in a natural or classroom setting and the effect of that frequency on his or her lexical acquisition process. Obvious research questions related to this facet are: To what extent does frequency of exposure affect a learner's acquisition of particular lexical items? How many exposures to a lexical item are required for acquisition to be complete? These questions have been hotly debated for some time and, like many aspects of SLA, still remain contentious. For example, some studies show little but significant gains in lexical acquisition after one or three exposures to unfamiliar lexical items (Hulstijn et al, 1996) while others suggest 5-15 exposures as a minimum to facilitate significant learning (Saragi, Nation, & Meister, 1978). In a study examining the effects of reading on lexical acquisition, Rott (1999) investigated the effects of frequency of exposure to

[14] As Curtis (1987) notes, "more frequently occurring words make instructing students on the vocabulary universe of a particular language more within the reach of instruction. However, at times there can be a lack of straightforward relationship between word frequency and word difficulty, making using printed frequencies alone problematic." (p. 42)

unfamiliar words on the acquisition and retention of those unfamiliar words. In manipulating the number of times learners were exposed to particular lexical items, Rott sought to determine whether and to what extent lexical acquisition is affected by frequency of exposure. Results of her study indicated that the frequency with which learners encountered unfamiliar lexical items did have a measurable impact on the amount of vocabulary the learners gained. More specifically, Rott found that after only two exposures, participants gained more productive word knowledge than participants who had not encountered the target words during reading. Four exposures to the target items resulted in similar gains as the participants who received only two exposures, while those participants who were exposed to the target items six times showed significant lexical development. Rott's results, in addition to those of numerous other experiments (e.g., Jenkins, Stein, & Wysocki, 1984; Nagy et al., 1985; Hulstijn, 1992; Dupuy & Krashen, 1993; Parry, 1993; Nation & Waring, 1997; Paribakht & Wesche, 1997) seem to indicate that frequency of exposure to unfamiliar lexical items positively affects vocabulary acquisition.

3.2.2 Word length

Could it be that a word's length influences the degree of difficulty with which a learner acquires it? Intuitively, one might think that longer words would be more difficult to learn, but is that really the case? If we consider the fact that there are lengthy words containing various morphemes that are familiar to the learner, then could it not be argued that these words may not be difficult to acquire and may in fact be less difficult to acquire than shorter words that do not contain morphemes familiar to the learner? For example, words such as *inespugnabile* (impregnable) or *disgraziatamente* (*unfortunately*) are relatively long words, however, they also contain a number of morphemes that the learner can analyze in order to both understand and recall the words with relative ease, provided he or she is familiar with the form and meaning of

the morphemes. It may be the case that a short Italian word such as *zio* (uncle) could be more problematic than a longer word such as *incapace* (incapable) if the learner recognizes the morphemes contained in the latter word. To date, a number of studies examining the role of word length on memorisation of lexis, on word recognition, and on learning have yielded mixed results, none of which are conclusive. Rodgers (1969) examined the learning of Russian–English word pairs. He found that in comparing total syllables-per-item, ratios for the most-learned and least-learned word pairs were about the same, meaning that word length did not factor as a significant contributor in learning the word pairs. On the other hand, Coles (1982) found that word length did in fact have a significant effect on the recognition of written words. Results of the study showed that learners produced a greater number of errors in recognition tasks when words were longer, particularly when learners' L1 did not utilise Roman script.

The difficulty in determining conclusively the role word length plays on lexical acquisition lies in the extremely complex task of isolating in a research study word length from other factors that are intralexical, interlexical, and/or psycholinguistic and that influence lexical learning.

3.2.3 Morphology

In the previous section on word length, the subject of word morphology was touched upon as it pertains to the learner's ability to analyze long words by breaking them down into the various morphemes that make them up. It stands to reason that the greater the number of morphemic features a word carries (e.g. gender, plurality, case, etc.) the greater the learning burden on the learner compared to a word that does not carry such features. For example, an Italian L2 learner may find it taxing to recall the rules for the pluralisation of Italian nouns since they are not as straightforward as the English rule of adding a final –s to most singular nouns.

Nevertheless, the regularity governing the combinations of morphemes in the creation of meaning in a language can ease some of the burden of learning certain words. For example, the Italian L2 learner quickly learns the rules for Italian gender assignment: words ending in –a are generally feminine, those ending in -o are masculine. However, the difficulty arises when there is a lack of regularity or when exceptions to the rule occur. For example, some Italian nouns ending in –a are masculine (e.g. *un dentista* – a dentist; *un cinema* – a movie theatre) and this is a cause of difficulty for the learner. Laufer (1997) points out that these are cases of 'deceptive transparency' (p. 146) and are problematic for the L2 learner. These are words that seem to be transparent to the learner in terms of their morphology but that are deceivingly so since their morphology is not what it seems. Laufer and Bensoussan (1982) conducted experiments in which they found that participants in their study interpreted the word *outline* as 'out of line' and *discourse* as 'without direction' since "the learner's assumption here was that the meaning of a word equalled the sum of meanings of its components" (Laufer, 1997, p. 146). An Italian L2 learner who sees the word *casaccio* ('at random') and who knows the word *casa* ('house') and the suffix *–accio* ('unattractive' or 'bad') may perceive the former to mean 'ugly house' based on his/her previous knowledge of the Italian morphemes that, deceptively, seem to make up *casaccio*. Another example of a morphologically deceptive lexical item in Italian could be the verb *disperdere* ('to scatter'). A beginner L2 learner of Italian would recognize the verb *perdere* ('to lose') and the prefix *dis-* (indicating the negation of an action or 'lack of') and therefore could plausibly conclude that *disperdere* means 'to retrieve' or 'to find' based on the separate semantic meaning of the individual morphemes making up *disperdere*. Lexical items such as these can clearly be sources of difficulty for learners of a target language in that they give learners a false sense of mastery of the language and this is one of many reasons, as will be discussed in section 3.5, context is of such importance to the acquisition of the L2 lexicon.

3.2.4 Synformy

Synformy refers to words that share a similarity of their forms, either phonologically or in written form. Synformy has been shown to cause learners to confuse words that sound and/or look alike, an indication that in learning new words, learners experience interference either from their L1 or from other words they learned previously in their L2. Numerous studies (see for example Henning, 1973; Duškóva, 1969; Meara, 1982; Laufer, 1985 & 1991) suggest that this interference can lead the learner to confuse words both in recognition and in production. Laufer (1997) notes that in some cases, "interviews of students revealed that they were not aware that they were reading unknown words since they associated them with similar words which were familiar to them (e.g. comprehensive/comprehensible; cancel/conceal; assume/consume)" (p. 147). Laufer (1985 & 1991) carried out a study of synforms in an attempt to examine the extent to which these synforms caused English L2 learners to make errors. She divided the similarities among the synforms into ten categories, each category representing one type of similarity between the target word and the error it induced. (E.g. synforms that have the same root but with different suffixes, such as *considerable/considerate*). Of the over 500 participants in her study, she found that those synforms that were most problematic to learners were those that differed according to suffixes and those that contained identical consonants but different vowels (e.g. *conceal/cancel; adopt/adapt*). Of note is the fact that Laufer found that the error-inducing property of synforms is not limited to only one L1 language group; rather, synformy, as her studies show, have proven to be problematic for learners of a variety of native languages (Laufer 1985, 1991). As such, an L2 learner of Italian might find the Italian words *cappello* ('hat')/ *capello* ('hair')/ *cappella* ('chapel') particularly problematic or *scarpa/* ('shoe')/*sciarpa* ('scarf'), *ricci* ('curly')/*ricchi* ('wealthy') or still yet *principio* ('principle' or 'beginning')/*principe* ('prince').

3.2.5 Grammar

It is not uncommon to hear language learners lament the difficulty of learning a foreign language's grammar as well as language educators bemoaning their students' inability to grasp a particular grammatical concept they have spent numerous hours clarifying. Perhaps it is for this reason that many people, researchers included, argue that there are certain aspects of grammar that are more difficult for learners to acquire than others. The most common perception is that nouns are the easiest to acquire followed by verbs and adjectives, and the most difficult grammatical category is adverbs. It is perhaps also for this reason that many foreign language textbooks as well as course syllabi place a strong focus on the elucidation and practice of those grammar points that are perceived as being more difficult. Phillips (1981) found that nouns were learned with greater ease than were verbs or adjectives, although this effect decreased as learner proficiency increased. Rodgers (1986), in looking at Russian-English word pairs, found that if the Russian word was an adjective or a noun, this made the word pair easier to learn than if it was a verb or adverb. However, it is possible, as Laufer (1997) points out, that there are other factors aside from part of speech that exerted an influence on the learners' ability to learn these particular words (e.g. the different tenses in which the various verbs are found may have also played a role since the morphological differences between them may have been problematic for an English L1 speaker). In fact, in opposition to the part of speech effect, Odlin and Natalico (1982) report that even though learners acquired the semantic features of target words, they often did not acquire their part of speech. For instance, in some cases in their study, verbs were used instead of nouns, nouns were used instead of adjectives, etc. Despite the controversy over which parts of speech may be easier or more difficult to acquire, from the perspective of contrastive analysis, it is likely that learners may find those parts of speech which, on a case-by-case basis, more closely resemble the parts of speech of their L1 less taxing to acquire than those parts of

speech that are very different from their L1. This could explain why, for example, an English L1 learner of Italian L2 finds it onerous to recognize and use the Italian reflexive verbs *sentirsi* (to feel) and *lavarsi* (to wash oneself) while a Spanish L1 learner of Italian L2 does not since reflexive verbs are very similar in both appearance and usage in Spanish (*sentirse, lavarse*) and Italian while in English they are not.

3.2.6 Conceptual features

Are concrete words easier to learn than abstract ones? Are idiomatic expressions more precarious to the language learner than their non-idiomatic equivalents? What about polysemy (i.e. multiple meanings)? These are some of the questions surrounding semantic aspects of lexical learning that have been argued to affect the learnability of words and which will be discussed here.

In terms of the concrete/abstract dichotomy, it is often argued that concrete words are much easier to learn than abstract ones since words denoting abstract concepts are perceived to be inherently more complex. But what exactly makes a word *abstract* while another is considered *concrete*? According to research, there is reason to believe that words can be classified according to certain features such as visual appearance, purpose, or function (cf. e.g. Altarriba, Bauer, & Benvenuto, 1999). More specifically, the learner's imaginal system may in certain cases provide a pictorial representation for a given concept. Studies show that although all words are represented in the learner's verbal system, only words that elicit a mental picture in the learner are connected to the imaginal system and these words tend to be considered *concrete* (cf. deGroot, Dannenburg & van Hell, 1994).

But are concrete words really easier to recall than abstract ones? Since a mental picture provides an additional means of storing and retrieving words, research findings show that

learners are more apt to recall concrete words with greater ease and accuracy than those that do not have pictorial associations (cf. Altarriba, 2003). If we are talking about first language acquisition, then this argument is justified since in the case of L1 learners, both cognitive and lexical development are progressing in tandem. However, if we are referring to L2 acquisition, then these learners have already developed their understanding of abstract concepts as they relate to their L1. So, as Laufer (1997) appropriately asks, "why then should an abstract L2 word like *love* be more difficult to understand and remember than a concrete L2 word like *book*?" (p. 150). The answer, once again, seems to depend on the learner's L1 and on that language's system of organizing ideas and concepts. According to the Revised Hierarchical Model of lexical representation, storage, and retrieval in language acquisition developed by Kroll and Stewart (1994), there is a large lexical store for the L1, a smaller one for the L2, and a third conceptual store that is linked to the learner's L1 and which contains the semantic and world knowledge that he or she has acquired over time. For instance, there may be words in the learner's L1 that overlap with the L2 in terms of conceptual classification so these words are likely to pose little difficulty to the L2 learner on the semantic level. On the other hand, words in the L2 that are part of a conceptual system that differs from that of the learner's L1, may be problematic for the learner with respect to recall. For example, the Italian *volere bene a* can be defined somewhere between *to care for* and *to love* with no true English equivalent, thereby making it a rather complex concept for L2 learners of Italian to grasp.

With respect to idiomatic expressions, the situation is much the same as for conceptual equivalence. Idioms are much more difficult to understand and to learn than are the meanings of the words making up those idioms. As such, it is much more difficult for an L2 learner to understand the meaning of the expression *fare due chiacchiere* (to have a chat) than to understand the individual meaning of *fare* (to make/do), *due* (two), *chiacchiere* (chatters). In

fact, Dagut and Laufer (1985) examined Hebrew speakers' avoidance of phrasal verbs in free expression and in elicited responses and found that they exhibited a marked preference for one-word verbs (e.g. postpone) to the phrasal verbs that English speakers typically chose (e.g. put off). This is not surprising since the learning burden of idiomatic expression is great: in addition to having to learn more than one word, the individual words that constitute the idiom give little if any clue as to the deeper meaning of the idiom. Even when different languages use similar idioms, the idiomatic expressions of the target language nevertheless present the learner with difficulty. Studies have shown that learners assume the idiomatic expressions of their L1 do not transfer to their L2 and therefore they tend to avoid using idiomatic expressions in the L2, particularly if these expressions tend to have a metaphorical meaning (cf. Kellerman, 1978 & 1986; Hulstijn and Marchena, 1989).

Finally, the influence of polysemy on word learnability has also been shown to affect second language learners. Polysemy refers to a word form that has several meanings as well as to a meaning that can be represented by several different word forms. When different meanings are represented by one form, this form can either be considered a polyseme or a homonym depending on whether or not the meanings are related to one another. For example, the Italian word *letto* ('bed'*)* refers to a piece of furniture, a marriage, the depths over which the waters of a stream or river flow, and the bottom part of a fisherman's net. *Letto* is considered a polyseme since each of its meanings is related to something that is lain upon. However, *collo* refers to the part of the human anatomy that attaches the head to the body, the thinner section of a bottle, the upper part of a shirt, a parcel, the lower section of a column's capital, the initial section of an estuary, among other things. *Collo* is considered a homonym because the various meanings it possesses are not related to each other. When it comes to L2 learners, the acquisition of polysemes can be difficult. Bensoussan and Laufer (1984) studied lexical guessing in context and

found that words with multiple meanings induced the largest number of errors in testing of word comprehension. They noticed that learners who were familiar with one meaning of a polyseme or homonym maintained their 'preconceived notion' despite the fact that it did not fit with the context of the passage they were reading. In learning an L2, it seems, learners find it inconceivable that an L2 word can refer to very different meanings and thus have difficulty adding to their initial understanding of a word's meaning.

3.3 Interlexical factors

3.3.1 Cross-linguistic influence/ interference/ transfer/ language distance

The influence of the learner's L1 on the acquisition of the L2 lexicon is, by now, clearly evident. From the learner's already-established understanding of the way the world is coded lexically and conceptually to the L1 phonological system the learner uses to approach the L2 system, it is undeniable that the mother tongue influences considerably the way a second language is both learned and used.[15] In addition to the manifestation of this influence in the form of cross-linguistic influence (CLI) (either negative or positive), language distance is an equally important facet of the relationship between L1 and L2. Language distance refers to the relatedness of languages in terms of writing conventions, aspects of semantics, stylistics, and/or certain grammatical structures (Gass & Selinker, 2001). As this section will show, language distance is largely determined by the learner.

[15] The literature makes use of several terms to refer to the influence of the L1 on the L2 and they are: cross-linguistic influence, interference, and transfer. Despite the fact that each of these terms has been deemed problematic to some degree, for the sake of clarity and consistency, the term cross-linguistic influence is adopted throughout this study since it is a broad term that includes many of the technical terms related to specific theories of language acquisition and thereby avoids adherence to only of these theories.

The proponents of contrastive analysis believed that if comparisons were made between the L1 and the L2, predictions could be made concerning the level of difficulty a learner would face in acquiring the L2:

> We assume that the student who comes in contact with a foreign language will find some features of it quite easy and others extremely difficult. Those elements that are similar to his native language will be simple for him, and those elements that are different will be difficult. (Lado, 1957, p. 2)

Despite the fact that contrastive analysis has since been challenged as a theory due largely to researchers' criticism of it as a serious oversimplification of a complex phenomenon, it does, however, underline the importance of looking at the relationship between a learner's L1 and the target language he/she is attempting to learn. Although not all differences between languages will cause problems, as was postulated by contrastive analysis, it is certainly justifiable to say that CLI can be defined as any instance in the L2 learning process in which the mother tongue "can support, fail to support or actively hinder someone who is learning or using the vocabulary of a second language" (Swan, 1997, p. 156).[16] CLI can be positive to the learner in those areas where the L1 and L2 share some aspect of language. For example, two languages that abound in cognates will allow the learner greater ease in recalling those words in the L2 that are similar to words in the L1. On the other hand, CLI can fail to support or hinder the language learning process when a learner makes incorrect correspondences between the L1 and L2. This type of CLI is often studied via the errors that learners make – e.g. when a learner employs a false cognate or calque - in misusing a word that is perceived as a cognate or in instances where the

[16] Contrary to the predictions of contrastive analysis, in many instances errors that learners were expected to commit due to differences between the languages in question did not actually materialize while other aspects of the L2 that the contrastive analysis theory hypothesized would be easy for the learner to 'pick up' were unexpectedly problematic for the learner. These are just two of the reasons why a comparison of two languages, no matter how detailed or complete, cannot unilaterally predict or explain the difficulties that arise in a learner's quest for language acquisition.

L2 utilises a class of words that is absent in the L1. Examples of calques between English and Italian abound. For example, L2 learners of Italian often misinterpret *rumore* ('noise') as meaning 'rumour' based on the similarity in written form and in phonology between the two words. Another example is *sensibile* ('sensitive') which can be mistaken to mean 'sensible'.

It is important to note here that research in the area of CLI has underlined that it is how the learner relates the L1 to the L2 that determines the extent to which the L1 will influence the learning of the L2 and not necessarily the typological distance between the two languages (see Kellerman, 1979). That is, it is the learner's *perception* of the distance between the two languages that allows him/her to make decisions concerning which aspects of the L1 are applicable to the L2 rather than the quantifiable differences between the two languages:

> The constraints on language transfer transcend the linguistic boundaries of similarity/dissimilarity of the native and target languages and encompass as a major variable the learner's decision-making processes related to the potential transferability of linguistic elements. […] What is crucial is that the degree of language closeness is based on a learner's *perception* of both the distance (not necessarily the actual language distance) between the languages and on the learner's perception of the organization of his/her NL [Native Language]. (Gass & Selinker, 2001, pp. 129-130)

The learner's perception of language distance becomes part of what has been termed the learner's *equivalence hypothesis*, which Ringbom explains in the following terms:

> The learner tends to assume that the system of the L2 is more or less the same as in his L1 until he has discovered that it is not. (Ringbom, 1987, p. 135)

In other words, the learner makes cross-linguistic comparisons by referring back to the L1 in an attempt to find the areas of common ground between the L1 and the L2. This can obviously be a source of positive CLI if the languages are closely related, since the learner is likely to perceive that some aspects of the L1 can be transferred to the L2. However, it can also be a source of

learner error when an L2 word or expression is misinterpreted as being equivalent to the L1. As discussed previously, when a word has more than one meaning or 'translation', learners tend to adopt only one of these and may use it in inappropriate contexts.

Section 3.2.6 briefly discussed the notion of conceptual organization and how the adult L2 learner's knowledge of the world derives from the way in which his/her L1 labels concepts. Returning to this point, it is important to recognize that there are often unclear boundaries with respect to how one conceptualizes the world and in some cases, there is subjectivity in the way a language categorises the world. For example, Swan points out that "English distinguishes streams from rivers, rather unclearly, on the basis of size; French, unlike English or Italian, distinguishes rivers which run into the sea (*fleuves*) from rivers which are tributaries of other rivers (*rivières*)" (p. 158). Jarvis (2000) conducted a study looking at the issue of L1 influence on interlanguage lexical reference. Participants included 537 youths living in Finland and 98 youths living in Indiana. The Finns all attended Finnish-language public schools and the Finland Swedes all attended Swedish-language public schools while the American participants were native speakers of English. The participants were given three primary elicitation tasks (both productive and receptive) that focused on lexical reference to specific objects (12 in total) and events (15 in total) as well as a test of receptive lexical knowledge. Even after controlling for such variables as educational, cultural, regional, age, and age-of-exposure differences, the results of the study showed convincingly that learners from the same L1 background exhibit homogeneity in lexical preference compared with learners from other L1 backgrounds. In other words, participants from the same cultural and linguistic background tended to select the same words to refer to both the events and the objects in question. This finding provides convincing evidence in support of the hypothesis that learners' lexical tendencies in the L2 are related to their L1 background. Jiang (2000) proposed a model of lexical representation in the L2 that highlights the influence of the

L1 conceptual system on the acquisition of the L2 lexicon and posited that one of the constraints on L2 lexical learning is the learner's L1 conceptual system:

> Given the presence of the established L1 lexical system, L2 learners, in particular adult learners, may tend to rely on this system in learning new words in a second language. […] When one learns a new word in a second language, however, it is very unlikely that a new concept, or a set of new semantic specifications, will be created in the process because corresponding, or at least similar, concepts or semantic specifications already exist in the learner's semantic system. Instead, it is more likely that that existing concepts or semantic specifications will be activated. (p. 49)

Jiang's model proposes three stages in the L2 lexical acquisition process: 1) the Formal Stage where lexical items are devoid of lemmas and which involves an activation of the links between an L2 lexical entry and its L1 translation equivalent[17]; 2) the L1 Lemma Mediation Stage where the L1 lemma information is copied into the L2 lexical item, where no morphological information is contained in the L2 lexical item, and where there is a weak connection between that lexical item and conceptual representation; and 3) the L2 Integration Stage where an L2 lexical item is similar to an L1 lexical item with respect to both representation and processing, meaning that all of an L2 lexical item's formal information is established within the item. Stages 1 and 2 of Jiang's model underline the extent to which the learner's L1 is involved in both the conceptual representation of the L2 lexicon as well as in the processing of the L2 lexicon. That is, in stages 1 & 2, the L1 lemma and conceptual information are called upon in order to process the L2 lexeme.

[17] The distinction between a lexeme and a lemma is crucial in the understanding of how lexical items are represented in the L2 learner's mental lexicon. A lemma can be defined as the component of a lexical item carrying semantic and syntactic information (i.e. word meaning, part of speech) and is often referred to as a 'dictionary entry' while the lexeme is the other component of a lexical entry that denotes formal information (i.e. morphological variants of a word, spelling, pronunciation, etc.). For example, *correndo-corre-corso[running, runs, ran]* are all lexemes while *correre [to run]* is the lemma.

The most widely accepted model of lexical representation is Kroll and Stewart's (1994) Revised Hierarchical Model which is, like Jiang's model, an attempt to clarify how the L2 learner processes previously unknown L2 lexical items and later retrieves them. Theirs is a model that emphasizes the strength of the lexical and conceptual links between the L1 and L2 as a function of a learner's fluency in L2 and which asserts that there are two routes to translation: a lexical route and a conceptual route. With respect to the lexical route, the L1 is typically more dominant than the L2 since even for fluent speakers, more words are known in the L1 and therefore, the lexical associations are stronger from L2 to L1 than vice versa. The strength of the links from L2 to L1 is greater because this is "the direction in which second language learners first acquire the translations of new L2 words" (p. 158). In terms of the conceptual route, Kroll and Stewart explain that adult L2 learners already have an established link between the L1 lexicon and their conceptual memory and for this reason, L2 lexical items are connected to the L1 through both lexical and conceptual links. In other words, an Italian L2 learner learning the word *ragazzo* (boy) associates the lexical item *ragazzo* with the English lexical item 'boy' and its English conceptual representation. As the learner becomes more proficient in the L2, more direct links between the L2 lexicon and the L2 conceptual system are forged, meaning the concept of *ragazzo* becomes more closely linked with the Italian conceptual representation of the lexical item than the English. Evidence for Kroll and Stewart's claims can be found in a number of studies comparing the time it takes subjects to translate an L1 word into the L2 and vice-versa (Kroll and Curley, 1988; Chen and Leung, 1989). The revised hierarchical model suggests that translation from L1 to L2 requires concept mediation while translation from L2 to L1 does not, but rather relies on lexical association. This is precisely what has been found (Kroll and Sholl, 1991; Kroll and Stewart, 1989): in translation tasks, subjects are consistently slower in translating from L1 to L2 than from L2 to L1, supporting the claim that less fluent L2 speakers

rely heavily on word-to-word associations between L2 & L1 before being able to conceptually mediate between both languages. It is for this reason that the progression of lexical representation from Jiang's stages 1 through 3 can be more efficient if the L1 and L2 are related (e.g. if they share a significant quantity of cognate vocabulary), however, it can also lead to learner error and/or other issues such as avoidance if the languages are distant.

In cases where the L1 and L2 are quite distant from one another and if they relate to very dissimilar cultures, the classification system of each may be so vastly different that the learner may be unable to establish any cross-linguistic equivalence since there may be no one-to-one correspondences between the languages at all. For instance, a Hungarian learner of Italian will discover that there are practically no cognates between the two languages (Hungarian is not an Indo-European language while Italian is and therefore they are unrelated languages). However, the learner will also discover that many of the concepts are familiar. On the other hand, a Hungarian learner of Chinese will not only find there are no cognates between the two languages but in addition, few of the concepts will overlap either, making it all the more challenging to learn the Chinese lexicon. Thus, language distance (both quantifiable and perceived), as well as cultural distance, can greatly affect the extent to which CLI plays a role in the learner's language production as well as the facility or difficulty with which a learner acquires the receptive and/or productive knowledge of the L2 lexicon.

3.3.2 Phonology

The phonological patterns of an L2 can have an important impact on the ease or difficulty with which an L2 learner is able to correctly produce the phonemes making up an L2 word. The phonological system of an L2 can present difficulties for the learner, difficulties that are determined to a significant extent by the learner's L1. The Contrastive Analysis Hypothesis

(CAH) (see Lado, 1957; Agard & Di Pietro, 1965; Di Pietro, 1971) addresses the extent to which the phonological distance between the learner's L1 and the L2 affects his or her ability to pronounce words in the L2. Phonology is one aspect of language learning that is perhaps the most difficult to acquire, particularly for adults, because of the adult learner's already established habits of response to L1 graphemes (the letter-to-sound correspondences of a language). According to the CAH, those words for which there is coincidence of phonemes and graphemes between the learner's L1 and L2 are less likely to be problematic for the learner. On the other hand, those words for which no correspondence exists between the phonemes of the L1 and L2 are likely to be more difficult for the learner to acquire, at least on a phonological and phonotactic level. For example, there is an exact one-to-one correspondence between the phonemes [f], [v], [b], [m,] and [n] and the graphemes these phonemes represent in English and Italian. As such, when an English learner of Italian attempts to learn the pronunciation of words in Italian containing these phonemes, he or she will likely not experience difficulty in pronouncing the words since the cross-linguistic influence of his or her L1 knowledge to the L2 is, in this case, positive. On the other hand, the graphemes that represent the Italian phonemes [k], [g], [č], [ĵ], and [s] constitute a major source of difficulty for the English learner of Italian. For example, the learner who encounters the word *che* [ke] in Italian is likely to associate the /ch/ with the [č] of the English 'child' instead of with the correct [k]. For example, English speaking learners of Italian tend to pronounce the word /chiesa/ (church) ['kjɛza] as the incorrect [čjeza] due to CLI from English 'church'. Likewise, the learner is apt to approach the Italian /c/ + -i with the expectation that this graphemic combination is comparable to English and pronounce it [s] in lieu of the correct [č]. For example, the Italian /medicina/, pronounced [medičina], is often mistakenly pronounced as [medisina] by learners of Italian who are speakers of English, due to negative CLI from the English /c/ pronounced [s] as in 'medicine'. Hulstijn (2001) argues that

the difficulties L2 learners face with respect to the L2's phonological system are due to what he calls the *codability* of morpho-phonological forms:

> Word forms may differ in difficulty for coding and storing depending on the learner's prior phonotactic knowledge. When an L2 learner embarks on the learning of an entirely new language morphonologically and phonetically unrelated to any language already known to him or her, he or she may experience great difficulties in storing isolated as well as clustered sounds or letters. Learning the first 15 content words of a new L2 language may take the beginning learner several hours. However, three months of daily study later, he or she may easily add another hundred new words to his or her […] vocabulary in one hour simply because, by that time, letters and sounds are no longer encoded as single units but in now familiar chunks of phonemes, morphemes, syllables and prosodic patterns. The learner now implicitly knows which sequences and combinations of elements are legal and which ones are not. (p. 261)

In addition to the CLI of a learner's L1 grapheme-phoneme system on the L2, learners may also have difficulty in discriminating between some L2 phonemes altogether, treating words as homonyms. As Laufer (1997) notes, "the learner's L1 system may be responsible for the learner's inability to discriminate between some phonemes and subsequent confusion of words differing precisely in these problematic phonemes" (p. 142). For instance, Italian L1 speakers learning English find the distinction between [t] and [ɵ] extremely difficult to discern since [ɵ] is not present in the Italian phonological system and as such, words such as 'taught' and 'thought' may sound like homonyms to these speakers.

Pronouncing a word correctly also involves placing stress on the correct syllable. Learners of languages with fixed stress (e.g. penultimate in Italian) will find it easier to pronounce words in that language compared to learners of languages with variable stress patterns such as English (e.g. geógraphy, geográphic), whose pronunciation can only be learned via the word's spoken form.

Due to the numerous factors involved in pronouncing words correctly, there may be, as Laufer (1997) notes, "a gap between the learner's ability to perceive a word and his/her ability to

produce it correctly" (p. 143). As such, learners may develop a coping strategy to deal with this problem, and that strategy is known as avoidance. That is, the learner simply avoids using words that pose a phonological difficulty and is a strategy many adult language learners utilise since they have a greater tendency to be self-conscious of the way they sound when they speak.

3.4 Implicit and explicit learning

Why is it that there are some things we as humans are able to do without thinking about the processing involved while others we must learn through conscious effort? We are able to learn how to walk without thinking about each muscle involved in the action but we must learn how to solve quadratic equations. Children are able to acquire their mother tongue even without being explicitly taught the 'rules' of their language. How is this possible? To what extent are humans guided by innate biological predispositions in the language learning process? Does second language acquisition share these same predispositions? The psychological and linguistic literature has yielded a plethora of theories and studies seeking to answer these very questions yet the implicit/explicit learning dichotomy remains moot and as a consequence, there is as yet no single theory of language acquisition that has been accepted unanimously. In this section, the main theories of implicit and explicit learning are explored.

Two main theories have emerged on the issue of implicit learning: the nativist position, emphasizing the determining and constraining aspects of neurobiological structures, and the empiricist position, which assumes that language acquisition is not governed by language structures that are specialised for that specific task, but rather that it is carried out as a result of generalised processes of cognition (Winter & Reber, 1994). Perhaps the most well-known proponent of the nativist position is Noam Chomsky who postulated that humans acquire language forms thanks to an innate, species specific system which he called the Language

Acquisition Device (LAD). Chomsky argued that the LAD allows humans to formulate rules about their mother tongue and, based on those rules, to produce creative language that cannot have been learned through input. In contrast, the empiricist view of implicit learning is that language learning makes use of the same kinds of cognitive processes that are used in acquiring other types of knowledge. Unlike the nativist view, the empiricist view maintains that the language system does not contain modal-specific knowledge, but rather it is equipped with the mechanisms to develop knowledge from exposure to and engagement with the environment.

But how exactly can we define implicit knowledge and how does it differ from explicit knowledge? How can we apply these two aspects of learning to SLA? According to Ellis (1994), implicit learning is "the acquisition of knowledge about the underlying structure of a complex stimulus environment by a process which takes place naturally, simply and without conscious operations" (p. 1). In other words, it is knowledge that is gained subconsciously and which derives from experience. On the other hand, explicit learning is "a more conscious operation where the individual makes and tests hypotheses in a search for structure" (Ellis, 1994, p. 1) and as a result of which knowledge is gained through a selective learning process. With respect to both first language acquisition and SLA, explicit learning is normally associated with knowledge of the rules of a specific language while implicit language learning refers to an individual's ability to acquire a language via his/her attempts at communication. In first language acquisition, most people acquire the ability to communicate in their mother tongue using complex syntactic and morphological structures yet they may never have learned these structures explicitly through instruction or study. If a child is asked how to pluralize nouns in English, he/she would likely not know how to respond. However, a common illustration of the extent to with the L1 is learned implicitly is if a child is told "Here is a wug. If this is another wug, what have you got?" The child will most likely reply that there are "two wugs". This example

illustrates how even very basic exposure to linguistic structures and behaviour leads children to the acquisition of their L1, without requiring any explicit instruction.

With SLA, the picture is not quite as straightforward. Since the 1950s, several L2 teaching methods (Audiolingual method, Natural Approach, Communicative Approach) claimed that SLA is akin to first language acquisition in that it too is acquired implicitly. The distinction was made between implicit knowledge (acquisition) and explicit knowledge (learning) and it was held that knowledge that was gained explicitly could not be converted into acquired knowledge. Krashen, whose hypotheses concerning SLA have largely been discredited due to their lack of testability, is probably one of the most well-known proponents of this view and his theories of SLA emerged largely in response to, or rather in defiance of, some of the more traditional L2 teaching methods (e.g. Grammar Translation, Cognitive Code) that were *en vogue* in the late 1960s and 1970s and which were heavily rule-based. Unlike these methods that underlined the importance of perception and awareness of L2 rules, Krashen's Input Hypothesis (IH) (1985) made the claim that SLA can only happen when the learner understands the input he/she receives and that progress in SLA takes place when the learner is faced with input that contains structures only just beyond his/her current level of L2 linguistic knowledge (i+1). According to Krashen, the explicit rules about the L2 that a learner is exposed to only serve as a monitor or editor for accuracy of output when the learner is especially concerned about correctness. Krashen's radical ideas sparked considerable debate on the question of implicit learning and his hypotheses have since been questioned by the SLA community, which argues explicit language learning plays a greater role in SLA than perhaps Krashen and his followers thought. For example, his suggestion that language acquisition must result from subconscious learning processes because people have not been explicitly taught the vast majority of words they know does not actually entail that explicit learning has not taken place. Simply because people were not taught the

vocabulary they know and use does not imply that they did not teach themselves. N. Ellis (1994) points out that for an implicit hypothesis to be sound, it must demonstrate the following:

> i) that acquirers really are unaware
>
> ii) that they fail to notice that the vocabulary item is novel
>
> iii) that they do not selectively attend to it
>
> iv) that they do not use a variety of conscious strategies to try to infer its meaning from context
>
> v) that they do not apply metacognitive knowledge to guide application of appropriate mnemonic techniques to consolidate the new concept-label in memory
>
> (p. 7)

Ellis' point is that there is no simple answer to the question of whether SLA results from either implicit or explicit learning. R. Ellis (1994) adds that in addition to the implicit/explicit dichotomy, another dimension, the controlled/automatic processing dimension, can be added. Controlled versus automatic processing derives from the attempt to account for second language acquisition as progression from a stage requiring more cognitive demands to a stage of performance where the cognitive burden is significantly lower. According to Ellis, controlled processing, therefore, "is a temporary activation of memory nodes through attentional control" (p. 85) while automatic processing "occurs when a particular 'response' has been built up through successive mapping of the same input to the same pattern of activation over many trials" (p. 85). Table 2 illustrates how explicit and implicit knowledge, along with controlled and automatic processing, intersect:

Table 2: Types of Knowledge

Type of knowledge	Types of processing Controlled	Automatic
Explicit	(A) A new explicit rule is used consciously and with deliberate effort.	(B) An old explicit rule is used consciously but with relative speed.
Implicit	(C) A new implicit rule is used without awareness but is accessed slowly.	(D) A thoroughly learnt implicit rule is used without awareness and without effort.

As R. Ellis (1994) notes, the chart highlights the four types of knowledge that are possible:

> (A) can be found when learners who have just been taught a formal explanation of a grammatical rule attempt to use it consciously and intentionally in a grammar exercise. (B) occurs when these learners come to make regular use of the taught rule in a variety of tasks; the rule is still used consciously and intentionally but can now be accessed and applied with considerable facility. (C) may be found when learners have noticed some new grammatical feature in the input and use it in their own output, but without conscious deliberation. It is likely, though, that this feature will be accessed less easily than some other earlier acquired L2 feature, which it may be replacing. (D) resembles the kind of intuitive, readily accessible linguistic knowledge that native speakers utilise in everyday language use. (pp. 86-87)

Both controlled and automatic processing can take place with or without awareness, when it comes to explicit knowledge; by contrast, implicit knowledge does not involve awareness. It is also important to note that both explicit and implicit knowledge are assumed to be represented in the learner's mind as either controlled or automatic processes, meaning that a learner could potentially retain all four types of knowledge of one single L2 rule. This helps us to understand how implicit and explicit knowledge can intersect with types of processing but it does not explain the relationship between implicit and explicit learning. R. Ellis supports the weak-interface position with respect to this relationship, a position that seems the most reasonable. Unlike the no-interface position, which argues that no amount of practice can transform explicit

knowledge into implicit knowledge, the weak-interface position posits instead that explicit knowledge from formal instruction directed at a specific feature of language can become implicit knowledge, but only if the learner "has reached a level of development that enables her to accommodate the new linguistic material" (Ellis, 1994, p. 88). Perhaps, therefore, the questions surrounding implicit and explicit learning should not be viewed as 'either/or' but rather as 'and'. A more productive question would be 'which aspects of L2 learning can be attributed to implicit learning and which to explicit learning?'

Two processes seem to be involved in learning explicitly: memorisation and problem-solving. Memorisation takes place when the learner consciously attempts to commit linguistic information to memory (e.g. memorising the gender of Italian nouns), while problem-solving occurs when the learner tries to induce explicit information about the L2 from the input he/she is exposed to. For example, the learner pays attention to a formal feature of the L2 in the input and tries to comprehend it. On the other hand, implicit knowledge is acquired incidentally from mere exposure to input that the learner comprehends. For example, in an L2 classroom where classroom routines are used frequently, such as the teacher requesting students open their books, learners readily acquire implicitly the expressions related to these routines. However, if the learner notices some feature of the fixed routine expressions and attempts to analyse it using contextual clues and/or his/her previous knowledge, this could certainly be considered a form of explicit learning originating from the learner's own exploration of the language. R. Ellis' weak interface position certainly supports this view. Instead of viewing implicit/explicit learning as wholly mutually exclusive concepts, he argues that explicit learning should be viewed as a support to the development of implicit knowledge:

> First, explicit knowledge may help the learner to notice features in the input that would otherwise be ignored. For example, if learners learn the

> formal rule for 3rd-person –s, they may be less likely to overlook the presence of this feature in the input. […] Second, explicit knowledge may facilitate the process of noticing-the-gap. Thus learners are better able to compare what they have noticed in the input with output derived from their current interlanguage […] if they are equipped with explicit knowledge. (p. 98)

Although explicit knowledge cannot supersede implicit knowledge since L2 success depends on a learner's implicit knowledge, it is highly plausible that explicit knowledge of the L2 contributes to the development of the learner's interlanguage by acting as a vehicle for acquisition and that it can eventually become implicit knowledge if and when the learner is ready to internalize it.

3.5 Incidental vocabulary learning

Within the theories and debates surrounding whether second language acquisition results from implicit or explicit learning processes, the concepts of incidental and intentional learning arise, particularly in discussions pertaining to lexical acquisition through reading. Both incidental and intentional learning can be viewed as complementary to the implicit/explicit learning dichotomy, however, the two terms are often misused in the literature, frequently being conflated as synonyms of implicit and explicit learning respectively. Schmidt (1994) provides three definitions of incidental learning summarized as follows:

> i. it is learning without the intention to learn
>
> ii. it is the learning of one stimulus aspect while paying attention to another stimulus aspect. That is, it is the "learning of one thing […] when the learner's primary objective is to do something else […]" (p. 16)
>
> iii. it is the learning of formal features (e.g. grammar) through a focus of attention on semantic features (e.g. communication)

In experiments of incidental learning, participants are typically not told in advance that they will be tested following the information processing tasks they carry out, allowing researchers to

examine the effect of that particular type of information processing. Two types of incidental learning experiments are generally carried out, the first known as a Type I design. In this type of study, participants normally perform some kind of orienting task, which allows them to "experience the material to be tested but does not lead them to expect a later retention test" (Hulstijn 2001, p. 10). As an example, participants may be given a word list and told to circle all of the words containing the letter 't'. Afterwards, they are tested for recall of all the words that appeared in the list, not just those containing a 't'. Another type of incidental experiment design is called Type II and in this design participants are instructed to learn something specific but not the information that is targeted for testing. For example, participants may be given a word list and asked to learn every second word. The participants are not told, however, that they will later be tested on their recall of all the words in the list.

Intentional learning, on the other hand, is generally viewed as "the rehearsal and memorizing techniques invoked by learners when they have the explicit intention of learning and retaining lexical information" (Hulstijn, 2003, p. 359). Intentional learning experiments generally involve participants being instructed to learn specific verbal information that is associated with other information, either verbal or non-verbal (e.g. pictorial). One body of research employing the intentional learning model is the *keyword method (*see e.g. Ellis & Beaton, 1993; Cohen 1987; Cohen & Aphek, 1980). This technique involves the creation of a mediating word that is meant to facilitate retention of a target word by allowing the learner to develop a connection between the form and the meaning of the target word. The mediating word is the keyword and ideally its phonology should resemble the form of the target word while also allowing the learner to associate the target word with a visual representation of the keyword. For example, a learner of the Italian word *chiesa* (church) could use the English word 'keys' which is similar in sound, while also creating the mental image of a large key opening the doors of a church. In this type of

research, participants are clearly told that the aim of the exercise is the retention of specific words. As such, in methodological terms, incidental learning and intentional learning can be distinguished by the presence or absence of forewarning concerning testing. In other words, in incidental experiments participants are not told in advance that they will be tested on some type of information processing while in intentional experiments, participants are forewarned that they will be tested on that information processing. The obvious question that begs to be answered, however, is: What is the difference between incidental/intentional learning and implicit/explicit learning? Considering the myriad definitions of the terms 'implicit' and 'explicit', the main distinguishing feature among them involves the presence or absence "of conscious operations" (N. Ellis, 1994, p. 1) also referred to as the presence or absence of "awareness at the point of learning" (Schmidt, 1994, p. 20). Paradis (1994) proposed that implicit knowledge is "acquired incidentally (i.e. by not focusing attention on what is being internalized, as in acquiring the form while focusing on the meaning), stored implicitly (i.e., not available to conscious awareness), and used automatically (i.e. without conscious control)" (p. 394). As such, Hulstijn (2003) notes that "incidental learning […] is always implicated in implicit learning; implicit learning thus entails more than what is meant by incidental learning" (p. 360). Similarly, explicit learning implies "awareness at the point of learning (e.g. by trying to understand what the function of a certain language form is" (Hulstijn 2003, p. 360) while intentional learning involves "a deliberate attempt to commit new information to memory (e.g. by applying rehearsal and/or mnemonic techniques)" (Hulstijn 2003, p. 360). In other words, implicit and explicit learning are the by-products of incidental and intentional learning respectively. However, it should be underlined that although explicit learning can occur both intentionally as well as incidentally, only implicit learning can take place incidentally.

3.5.1 Incidental learning: empirical evidence

In SLA, the concept of incidental learning is normally dealt with in the realm of vocabulary acquisition as it relates to reading. The main reason the lexicon has been the focus of research in incidental learning is simply that most L2 researchers and educators agree that the vast majority of the lexical competence beginner L2 learners acquire cannot be attributed to the formal study of those lexical items in the classroom setting; undoubtedly, learners 'pick up' this vocabulary from some other medium and through some other process than direct instruction. Research in L1 reading has provided substantial evidence that a large proportion of the increase in learners' acquired vocabulary can be ascribed to learning through context (see e.g. Nagy, Herman & Anderson, 1985; Nation & Coady, 1988). Nagy et al. (1985) researched the effects of reading on school children's L1 acquisition through reading and found that gains made through this type of learning are incremental and depend upon repeated exposures to the vocabulary. According to their estimates, the probability of learning a new word from context after a single exposure is between 5-10%. Studies on the effects of L2 reading on lexical acquisition are not as numerous as studies on L1 reading and vocabulary acquisition, however, those studies that have been conducted show that increases in learners' lexical knowledge can be made through reading practice when learners are motivated and focused on understanding the context of the reading (Elley and Manghubai, 1983; Pitts, White & Krashen, 1989; Paribakht & Wesche, 1997 & 1999). Pitts, White, and Krashen (1989) conducted a study in which native speakers of English read two chapters of Anthony Burgess' *A Clockwork Orange*. The text contained unknown words of Russian origin that were used in the novel as a slang called *nasdat*. The participants were not told that they would be tested on their recall of the *nasdat* words. The authors found that small gains in vocabulary were recorded in comparison with control groups and therefore led them to conclude that reading can facilitate the acquisition of vocabulary. Hulstijn (1992) investigated

whether it is more effective and efficient for L2 learners to infer the meaning of unknown words from an L2 text or to give the learners the meaning of the word right away by providing an L1 translation. He conducted five experiments in which participants were given a Dutch text to read followed by a reading comprehension task and an unexpected posttest of 12 target words. For the posttest, some of the groups were given multiple choice questions related to the meaning of unknown words from the text (e.g. What is the meaning of word X in line Y? Pay attention to the context and choose from the following alternatives), while other groups were asked to infer the meaning of unfamiliar words from context. Results of the study found that "L2 learners reading a text for comprehension of its content and not with the intention to expand their L2 vocabulary […] are more likely to remember the form and meaning of an unknown word in the text when they have inferred its meaning by themselves (high mental effort) than when the meaning has been given to them (low mental effort)" (p. 122). Yet perhaps the most well-known example of learning vocabulary incidentally is Canadian French-immersion programmes where pedagogy is focused on the comprehension of meaning. These programmes have demonstrated that gains in some aspects of new vocabulary knowledge can be made as a result of this focus (e.g., Genesee, 1987). Wode (1999) studied the incidental learning of productive vocabulary in a grade-7 immersion programme in a German high school where German was the L1 and English was the L2. He compared one immersion class with two control groups and found that the immersion class, which was taught one extra subject (History) in English over and above their regular English-language lessons, "used a considerably larger vocabulary than the two control groups in terms of both types and tokens" (249).

In other words, research seems to indicate that when a learner is focused not on the explicit goal of learning new words but rather on comprehending a message, incidental acquisition of vocabulary can take place. Yet what this research also shows is that relying on

incidental learning to give rise to gains in vocabulary knowledge is rather slow, inefficient, and does not always lead learners to native speaker levels. Essentially, how vocabulary is acquired incidentally is still poorly understood. Many questions surround the question of incidental vocabulary acquisition: What is the actual mechanism of incidental acquisition? What type and size of vocabulary does the learner already need to possess in order to acquire words from context? How many exposures to a word are required for acquisition to take place? How can we be sure acquisition is actually taking place incidentally? Nevertheless, important contributions to this field have brought researchers closer to understanding the complexity of incidental vocabulary acquisition and its contribution to the lexical acquisition process.

3.6 Depth of Processing

During the 1960s and 1970s, researchers in psychology began to move away from the previous adherence to behaviourist theories that supported the idea that learning develops from habits that are conditioned by the external environment. Instead, they became much more interested in understanding how people process stimuli or rather what the cognitive processes are that underlie language learning. With respect to incidental learning, a seminal paper by Craik and Lockhart (1972) caused a shift in the way incidental learning was perceived and their theory on the 'depth of processing' generated renewed interest in the concept of incidental learning in general. Craik and Lockhart noted that models of human memory were concerned with distinguishing between different memory stores in the brain and providing criteria that allowed for this distinction, namely the limits of storage capacity, the ways in which information is coded within that store, and finally how the stored information is retained in both short-term memory and long-term memory. The psychological literature provided evidence largely in favour of a multistore model that postulated that the human brain consists of three so-called 'holding

mechanisms or memory stores' (Craik & Lockhart, 1972, p. 671) that would allow information to be held in one of three different levels of storage depending on how the information was processed: sensory stores, short-term store (STS) and long-term store (LTS). Sensory stores are considered modality-specific, have a moderately large capacity, and are 'preattentive' in that the subject need not pay attention to the information in order for that information to be stored here. The STS, by contrast, allows for the phonemic or auditory-verbal-linguistic coding of input and is of limited capacity. Finally, LTS has no known limits to its capacity and here verbal items are coded semantically. In spite of the strengths of the multistore model, critics argued against the notion that information is transferred from STS to LTS and also contested the view that memory stores, if they are indeed multiple, have a specific storage capacity, citing that it was not clear whether the limitations of the stores were indeed of capacity or whether they were limitations of processing capacity or an interaction between the two (Craik and Lockhart, 1972, p. 673). With respect to coding, critics also argued that the distinction between acoustic and semantic coding was not as clearly defined as previous research suggested, citing studies demonstrating that STS coding could be either acoustic or articulatory and that at times it can also be visual as well as semantic, meaning STS "can accept a variety of physical codes" (Craik and Lockhart, 1972, p. 674). Finally, the retention criterion, which would require invariance among different paradigms and experimental conditions in order to be indisputable, was also the subject of criticism, most notably because it did in fact show characteristics for forgetting that were not identical across paradigms. Research showed that the memory trace varied in durability depending on the material involved as well as the paradigm, meaning that "retention depends upon such aspects of the paradigm as study time, amount of material presented and mode of test" (Craik and Lockhart, 1972, p. 675).

In light of the weaknesses that were clearly apparent in the multistore model for information processing, Craik and Lockhart (1972) suggested instead that "perception involves the rapid analysis of stimuli at a number of levels or stages" (p. 675). They described these levels or stages in the following terms:

> Preliminary stages are concerned with the analysis of such physical or sensory features as lines, angles, brightness, pitch, and loudness, while later stages are more concerned with matching the input against stored abstractions from past learning; that is, later stages are concerned with the pattern recognition and the extraction of meaning. This conception of a series or hierarchy of processing stages is often referred to as "depth of processing" where greater "depth" implies a greater degree of semantic or cognitive analysis. (p. 675)

In other words, they posited that memory trace is a function of the degree of depth with which information is processed, meaning that the deeper information is analysed, the more elaborate, longer lasting, and stronger the memory traces will be. Simply put, we remember things better when we do more with them cognitively. Craik and Tulving (1975) carried out incidental learning experiments testing the depth of processing theory. Participants were informed that the study concerned perception and speed of reaction. They were presented with a different word for a duration of 200 msec. Prior to the word being shown, however, participants were asked a question about the word with the purpose of inducing him/her to process the word to one level of analysis. So, participants were either led to process each word at a shallow level or at a deep level. Following a series of trials, the participants were given an unexpected retention test on the words with the hypothesis being that words processed at deeper levels would be retained better than those processed at shallow levels. Results showed that memory performance was strongly determined by the nature of the judgment required by the participants. That is, questions that were related to semantics yielded better memory performance than questions involving the word's phonology or its graphemes. These results confirmed Craik and Lockhart's proposition

that what determines the recall of a word is not the learner's intention to learn nor is it "the amount of effort involved, the difficulty of the orienting task, the amount of time spent making judgments about the items, or even the amount of rehearsal the items received; rather it is the qualitative nature of the task, the kind of operations carried out on the items, that determines retention" (Craik and Tulving, p. 290). In other words, it is what learners do with the target vocabulary that leads them to acquire it or not; or, put in a different way, the deeper the processing involved, the better the retention.

Craik and Lockhart's theory concerning the effects of depth of processing on memory was, as mentioned previously, a break from the behaviourist tradition and caused the language research community to look at the process of language acquisition differently. However, their theory was not without its detractors and was subsequently challenged to the extent that it was eventually rejected completely. Two of the most problematic aspects of the depth of processing theory are: 1) What do we mean by 'depth' of processing? and 2) How do we determine 'depth' or 'shallowness' of processing? How do we decide whether one type of processing is 'deep' or 'shallow'? Although attempts were made to resolve these and other issues, Hulstijn and Laufer (2001) noted that "a major obstacle facing all proposals resides in the difficulty of providing an unambiguous, operationalisable definition of any notion proposed as a replacement for depth of processing" (p. 6). However, what researchers of knowledge representation do agree on is that when learners process information more elaborately, that is, by paying attention to specific features of a word (e.g. pronunciation, orthography, grammatical category, semantics, etc.) this will lead the learner to better retention than if the learner were to process that same information less elaborately (i.e. by paying attention to less of these features).

3.7 The Involvement Load Hypothesis

From the issues surrounding the depth of processing hypothesis and the resulting lack of consensus regarding how to operationalise the depth of processing theory, Laufer and Hulstijn (2001) proposed the concept of task-induced involvement which has subsequently become known as the Involvement Load Hypothesis. Their construct is an attempt to bring together both the cognitive (input-processing) and affective (motivation) components of the language acquisition process so that specific incidental tasks[18] can be analysed for their level of involvement and therefore their respective effect(s) on incidental learning. By *involvement*, the authors imply the combination of three factors in a task: need, search, and evaluation, factors which, they posit, "can explain and predict learners' success in the retention of hitherto unfamiliar words" (p. 14). The affective or non-cognitive component of their construct is *need* and it constitutes a motivational dimension of involvement. *Need* refers to learners' *need to achieve*, which is based on a learner's motivation to comply with what is required by the task. The concept of motivation has figured prominently in the SLA literature as an important participant in the language acquisition process (see section 2.2.2 of this study) and Laufer and Hulstijn distinguish two levels of need: 'moderate' and 'strong'. According to their construction, a learner's *need* is moderate when "it is imposed by an external agent, e.g. the need to use a word in a sentence which the teacher has asked the learner to produce" (p. 14) while *need* is strong when it is imposed on the learner by himself or herself (e.g. attempting to express a concept without knowing the appropriate word for it).

[18] The term 'task' utilised here is that provided by Richards et al (1985, p. 289) which is defined as "an activity or action which is carried out as the result of processing or understanding language (i.e. as a response)." This definition can be contrasted with that from the task-based approach to language teaching, which provides a more specific meaning as "an activity in which: meaning is primary; there is some communication problem to solve; there is some sort of relationship to comparable real-world activities; task completion has some priority; the assessment of the task is in terms of outcome" (Skehan 1998, p. 95). This latter definition is appropriate for a specifically classroom-directed pedagogical discussion, however, the more general former definition is best suited to the present theoretically-driven discussion.

The two cognitive variables in the Involvement Load Hypothesis are *search* and *evaluation.* Both of these dimensions are "contingent upon noticing and deliberately allocating attention to the form-meaning relationship" (Schmidt, 1994, p. 2000). *Search* refers to the learner's attempt to uncover the meaning of an unfamiliar L2 word (e.g. trying to translate an L1 word into the L2) by consulting a dictionary or other authority (e.g. teacher). *Evaluation* implies that a comparison of a given word is made with other words, or a meaning of a word is compared with the word's other meanings, or still yet that a combination of a given word with other words is assessed as to whether it fits in context. For example, if a learner looks up a word in a dictionary and finds it is a homonym, he or she must compare the various meanings of the word and choose the one that fits best in the given context. As Laufer and Hulstijn (2001) note, "evaluation […] implies some kind of selective decision based on a criterion of semantic and formal appropriateness (fit) of the word and its context" (p. 15). According to their framework, *evaluation* is 'moderate' if it entails recognising differences between words (e.g. fill in the blanks with an appropriate word from a list) and it is 'strong' if it requires making a decision about combining a new word with other words in an original sentence.

Laufer and Hulstijn's framework is not meant merely as a theoretical construct, but rather, is intended to be directly applied to L2 classroom tasks. As such, an obvious question related to the Involvement Load Hypothesis is: how can a task be rated in terms of its involvement load? In other words, how can we determine whether a given task promotes strong or moderate involvement in the learner? According to the authors, any learning task can induce either one, two, or even all three components of involvement for every single target word. Involvement is therefore defined as "the combination of the presence or absence of the involvement factors Need, Search, and Evaluation" (2001, p. 15). For example, if a learner is presented with a reading comprehension task requiring looking up the meaning of a homonym in

a dictionary, this task illustrates need (because discovering the word's meaning is necessary for comprehension), search (since the meaning of the word must be looked up), and evaluation (the learner must compare different meanings and check these against the context before settling on one). On the other hand, if this task were modified somewhat so that the teacher glossed the unfamiliar words in the text, then the task does not require search or evaluation. As such, Laufer and Hulstijn argue that this latter task induces weaker involvement with the word than the former task since only once component, need, is required and therefore that when all other factors are equal, "words which are processed with higher involvement load will be retained better than words which are processed with lower involvement load" (p. 15). Laufer and Hulstijn point out that it is possible to design tasks so that the involvement load is nearly identical for all words involved and they coin this *task-induced involvement load*. This allows researchers and language educators to analyse a variety of tasks and rate them according to the presence or absence of the need, search, and evaluation criteria. For example, if learners are presented with a reading comprehension task in which unknown words are glossed but whose related comprehension questions do not require the student to utilise the glossed words, then this particular task does not require the learner to focus on the glossed words as they are irrelevant to the task (- Need), neither is the learner required to search for the words' meaning nor to evaluate the various possible meanings since these are already provided (-Search). Figure 4 below provides a concise analysis of a variety of classroom tasks for involvement load where a minus (-) indicates the absence of a particular involvement factor, a plus (+) indicates the moderate version of a particular factor while a double plus (++) marks the strong version of a particular factor.

Table 3: Task-Induced Involvement Load

Task	Status of target words	Need	Search	Evaluation

1. Reading and comprehension questions	Glossed in text but irrelevant to task	-	-	-
2. Reading and comprehension questions	Glossed in text and relevant to task	+	-	-
3. Reading and comprehension questions	Not glossed but relevant to task	+	+	-/+ (depending on word and context)
4. Reading and comprehension questions and filling gaps	Relevant to reading comprehension. Listed with glosses at the end of text	+	–	+
5. Writing original sentences	Listed with glosses	+	–	++
6. Writing a composition	Concepts selected by the teacher (and provided in L1). The L2 learner must look up the L2 form	+	+	++
7. Writing a composition	Concepts selected (and looked up) by L2 learner-writer	++	+	++

Hulstijn and Laufer (2001) also developed an *involvement index* whereby the absence of a factor is marked by 0, a moderate presence of a factor is marked as 1, and a strong presence of a factor is marked as 2. For example, Task 5 from Table 3 (Writing original sentences; words listed as glosses) would be rated as 3 (1+ 0+2) while Task 2 (Reading and comprehension questions; words are glossed in text and relevant to task) would be rated as 1 (1+0+0). According to the Involvement Load Hypothesis, then, which states that greater involvement leads to better retention, we can hypothesize that learners who complete Task 5 would likely retain vocabulary better than those learners completing Task 2 since Task 5 carries a greater involvement load (3) than Task 2 (1).

In order to verify their hypotheses surrounding the effect of task-induced involvement load on the retention of unknown vocabulary, Hulstijn and Laufer (2001) carried out 2 parallel experiments on the retention of English words by EFL learners in Israel and the Netherlands. Ten low-frequency words were selected as target words and learners were tested for their semantic (i.e. receptive) knowledge. Three tasks with differing involvement loads were utilised and each task was administered to a different group of learners: Task 1 – reading comprehension with marginal glosses; Task 2 – reading comprehension plus 'fill in' exercise; Task 3 – writing a composition and incorporating the target words. The authors hypothesized that those learners completing Task 3 would retain the ten target words better than those learners in the other two groups since involvement load is rated higher for Task 3 than for the other tasks. Results of the study showed that retention scores for those learners in the writing groups were higher in both immediate and delayed post tests than scores of learners in the other two task groups. This empirical evidence lends support to Laufer and Hulstijn's hypothesis that higher involvement load yields better vocabulary retention and also provides important evidence that pedagogical practices related to vocabulary instruction could benefit significantly from the application of the task-induced involvement load index.

3.8 Memory

One of the most complex and widely studied aspects of language acquisition, both first and second, is without a doubt human memory. Just like most research related to the human brain, the construct of human memory is not fully understood and continues to puzzle even the most seasoned scholars. How does the human brain remember information? For that matter, how and why do humans forget? Where is information stored? Are there different stores for different types of information? Does an L2 learner store L2 information differently than L1 information?

How do humans retrieve information? The questions related to memory are, it seems, as copious as the hypotheses surrounding it.

Study of human memory largely began at the end of the nineteenth century. In the 1950s, the idea of human Short Term Memory (STM) was a topic of profound interest and Hebb (1949) posited the idea that there may be a distinction between STM and Long Term Memory (LTM). This meant that the possibility existed that the human brain could be comprised of two neurophysiologically separate systems: one that involves temporary electrical circuits and another representing a permanent set of links between nerve cells. In the late 1950s, debate among scholars centred on the question of forgetting and whether this phenomenon could be related to a decay in the information trace or whether it was due to interference from other information. Those in favour of the two-system theory argued that since forgetting in the short-term seemed to reflect trace decay while in the long-term it appeared to result from interference, this must mean that human memory is comprised of two separate systems. By the late 1960s, the majority of researchers were in favour of the two-system construct of human memory. Perhaps the most widely accepted model of the period was Atkinson and Shiffrin's (1968) Modal Model which proposed a construct of three stages: 1) a bank of sensory buffer stores able to accept and store information temporarily from a range of different modalities; 2) the buffer stores would then feed into a limited-capacity Short Term Store (STS); 3) the STS in turn feeds information into and extracts information from a Long Term Store (LTS) of much larger capacity than the STS.[19] The central feature of the modal model is that LT learning is argued to depend on holding information in the temporary STS until it can be transferred to the LTS and as such,

[19] It should be noted that there is a distinction made between STM and STS. STM refers to the brain's holding of a specific task or situation while STS refers to the hypothetical memory system underlying STM. The same distinction is made between LTM and LTS. (Baddeley & Hitch, 1995)

learning is seen as a direct function of the amount of time particular information resides in the STS. However, as is the case with many models of human learning, the modal model was not without its critics and a number of other models, such as the Depth of Processing model (discussed in detail in section 3.6), emerged in response to 'flaws' in the existing model. But it was Baddeley and Hitch's (1974) Working Memory model that became and has remained the most widely accepted model of human memory. Unlike the previous models, Working Memory (WM) is multicomponent and is understood to be "a system for the temporary holding and manipulation of information during performance of a range of cognitive tasks such as comprehension, learning, and reasoning" (Baddeley, 1995, p. 24). Theirs is a tripartite model consisting of: 1) a central executive, responsible for the regulation of information within working memory as well as the retrieval of information from other memory systems (e.g. LTM), in addition to the processing and storage of information; 2) a phonological loop that maintains verbally-coded information and which also contains a process of articulatory rehearsal through which inner speech is utilised to refresh decaying representations; and 3) a visuo-spatial sketchpad that holds information of a visual or spatial nature. According to this model, the central executive uses processing resources that are limited in capacity and operates across a variety of tasks that involve different types of processing and different input modalities (Baddeley, 1995, pp. 34-35). Both articulatory rehearsal and the visuo-spatial sketchpad are limited-capacity and serial stores, only able to allocate attentional resources to one process at a time: the former can only say one thing at a time while the latter can only focus on one image at a time. With respect to language acquisition, it is important to underline that the slave stores are separate storage components of WM and that each is specialized for the retention of one specific type of information, either phonological or visuo-spatial. This implies that words presented visually are processed differently from words that are presented auditorily. When words are

presented auditorily, they provide direct access to the phonological store whereas words presented visually provide only indirect access to that phonological store via subvocal rehearsal. This is an important point because it means that the ability of learners to recall words is highly dependent upon the modality in which those words are presented to them as well as on the modality in which they are asked to recall those words. In other words, pedagogically-speaking, if learners are presented with words in written form, it may be unrealistic to test their recall of those words in oral form since the learners' visual memory store cannot encode the phonological form of the words.

The importance of phonological memory for L2 lexical acquisition is significant. Learning vocabulary in an L1 or L2 involves being able to sequence the phonological properties of that L2, including categorical units, syllable structure, and phonotactic sequences. In the L1 literature on child language acquisition, studies show that assessing STM span for digit sequences as well as assessing the longest sentence that can be correctly repeated correlates highly with children's vocabulary knowledge and provides evidence that the ability to retain verbal material in the short-term is associated with long-term vocabulary acquisition (Ellis & Sinclair; Baddeley, Papagno, & Vallar, 1988). In addition, Gathercole and Baddeley (1989) found that four-year old children's ability to repeat non-words in order accurately predicted the size of their L1 vocabulary one year later, suggesting that "the ability to represent a novel sound sequence of a new word in phonological STM has a role in its longer term consolidation both for later articulation and as an entity with which meaning can be associated" (Ellis and Sinclair, 1996, p. 235). The same correlation can be found in L2 vocabulary learning. Service (1992) analysed Finnish children's memory for pseudowords in the short-term and found that those words that sounded like English were predictors of the children's acquisition of L2 English over two years later, indicating that phonological STM is also involved in productive vocabulary,

which requires a greater cognitive burden. Other studies (Seibert, 1972; Ellis and Beaton, 1993a; Papagno, Valentine, and Baddeley, 1991) provide evidence that repetition (i.e. saying words out loud) leads to faster learning and better retention. Ellis and Sinclair's (1996) study of L2 Welsh learners and the effects of repetition versus articulatory suppression on vocabulary acquisition led to the same conclusion:

> [Repetition] of FL forms promotes long-term retention. We assume that as learners practice hearing and producing FL words, so they automatically and implicitly acquire knowledge of the statistical frequencies and sequential probabilities of the phonotactics of the FL. In turn, as they begin to abstract knowledge of FL regularities, they become more proficient at short-term repetition of novel FL words. And so FL vocabulary learning lifts itself up by its bootstraps. (p. 244)

Finally, Baddeley, Papagno, and Vallar's (1988) study of P.V., a subject who exhibited severe impairment of the phonological short-term store, provides convincing evidence that the inability to store material phonologically in the short-term prevents that same phonological material from being transferred to long-term phonological storage. Additionally, their results show that "the process of long-term learning requires some form of maintenance of the incoming material" (p. 593) and that one of the most important functions of the short-term phonological store lies in the learning of new words, a finding that is obviously of direct significance to the study of lexical acquisition. In short, with respect to vocabulary acquisition, in order for learners to be able to consolidate new lexical items in long-term storage, the processing and maintenance of the phonological form of those lexical items in the short-term store is of utmost importance and cannot be understated. This has direct implications for the present study, implications that will be addressed in sections 3.10 and 6.3.

3.9 Consciousness in L2 learning: noticing, attention, and memory

As discussed in the previous section, an understanding of how the human brain stores and retains information is elemental to the study of SLA, but an understanding of the 'how' of human memory storage does not explain the 'what'. That is, what is it that leads language learners to acquire certain aspects of the L2 and not others? Why is it that even after hearing or seeing a word or grammatical concept numerous times a learner is unable to produce it? This is the domain of learner *attention* and its correlate *noticing*, concepts that are related to the role of consciousness in second language input processing and that have been a source of controversy in psychology and consequently in SLA research.

Schmidt's (1990) noticing hypothesis is perhaps the most widely accepted and cited work on the issues surrounding unconscious vs. conscious processes in L2 learning. However, prior to this work, research was firmly divided along two distinct lines: on the one hand, many believed that in order for learners to both produce correct language forms and use them pragmatically, conscious understanding of the L2 is necessary; on the other hand, others held that language learning is essentially an unconscious process, one that takes place without the learner being aware of that process. For instance, Krashen subscribed to the notion that true language acquisition results from subconscious processes and furthermore, that any conscious learning on the part of the learner cannot lead to acquisition. In Schmidt's view, the concept of consciousness is crucial to SLA because it accounts for such interrelated notions as attention and short-term memory. His main claim is that "SLA is largely driven by what learners pay attention to and notice in target language input and what they understand the significance of noticed input to be" (2001, pp. 3-4).

In cognitive accounts of L2 development where psycholinguistic considerations are prominent, attention to input is understood to be elementary to the storage of information. But what exactly does it mean to pay attention? What is noticing? The terms 'attention' and 'noticing' are highly problematic in both psychology and SLA since operationalisable definitions distinguishing the two terms have invariably become difficult to construct thanks to their interchangeable status within the literature. Robinson (1995) identifies three usages of attention:

> It can be used to describe the processes involved in 'selecting' the information to be processed and stored in memory. […] It can be used to describe our 'capacity' for processing information. […] Finally, it can be used to describe the mental 'effort' involved in processing information. (p. 288)

Schmidt (1990) discusses the concept of noticing within his analysis of consciousness and posits that noticing is part of awareness, which is a conscious process. Noticing, according to Schmidt, can be understood as a *level* of awareness and is a subjective process that determines whether the contents of attention are consciously registered. For example, noticing implies not only hearing a grammatical marker but relating that marker to past linguistic experiences. Robinson points out that Schmidt's concept of noticing, which is very similar to the concept of detection, "is responsible for encoding in memory" (1995, p. 296). On the other hand, a metaphor commonly used to refer to attention is that of "a switchboard, gate, or filter that prevents us from being overwhelmed by the complexity of input" (p. 136). In other words, in order for the encoding of linguistic information in memory to take place (noticing), attention must be directed toward it. Clearly, noticing and attention are very closely related cognitive concepts that serve to illustrate the central role of consciousness in language learning, consciousness being the prerequisite for any learning process to take place.

It is commonly accepted that L2 learners process L2 input based on cognitive factors that determine the extent to which the learner will pay attention to them (e.g. frequency, perceptual salience) as well as allow the learner to be made aware of a "gap between what they can produce and what they need to produce, as well as between what they produce and what proficient target language speakers produce" (Schmidt, 2001, p. 6). It is argued that in order for learners to learn a foreign language, they must pay attention to and notice variations in all aspects of language from phonology to pragmatics to grammar to semantics. In Schmidt's view (1990, 1994) noticing is the necessary and sufficient condition for the conversion of input to intake[20] while Van Patten (1994) argues that attention is the most important factor in leading learners to L2 acquisition:

> Bob Smith is a learner of Spanish, a language that actively distinguishes between subjunctive and indicative mood […]. He begins to notice subjunctive forms in others' speech. He attends to it. Soon, he begins to use it in his own speech, perhaps in reduced contexts, but none the less he is beginning to use it. If you ask him for a rule, he might make one up. But in actuality, he doesn't have a rule. All he knows is that he has begun to attend to the subjunctive and the context in which it occurs and it has somehow begun to enter his linguistic system […]. Bob did not need to come up with a conscious rule; he only needed to pay attention. (p. 34)

The central question here then is: What is attended to or noticed in the input, what is not, and why? Van Patten (1984) proposes a set of hypotheses concerning the acquisition of surface features of language that suggest which features learners attend to in the input they are exposed to:

> H1. Learners process input for meaning before they process it for form.
>
> > H1a. Learners process content words in the input before anything else.

[20] Schmidt (1990) defines intake as "that part of the input that the learner notices" (p. 139).

> H1b. Learners prefer processing lexical items to grammatical items (e.g. morphological markings) for semantic information.
>
> H1c. Learners prefer processing 'more meaningful' morphology before 'less or non-meaningful' morphology'.

> H2. In order for learners to process form that is not meaningful, they must be able to process informational or communicative content at no or little cost to attention. (Van Patten, 1994, p. 32)

Van Patten's hypotheses illuminate two important aspects of attention. The first is that attention is of limited capacity, meaning that attentional resources are fixed and allocated to a specific aspect of language at one time at the expense of others. However, there is some flexibility with respect to this fixed capacity since it has been suggested that certain activities demanding attention can be carried out at the same time with relative ease as long as those activities draw upon different modalities (e.g. visual and oral). The second point Van Patten brings up is that learners' attention is generally directed to communication (i.e. the lexicon) before it moves to form. In other words, attention is selective based on the demands of specific tasks and must therefore be strategically allocated. Since attentional resources are limited, learners direct their attention first toward understanding the meaning of messages (i.e. the lexicon) and only when the attentional cost is reduced can they allocate the remainder of their attentional resources toward language form. Also of note is the fact that learners have a certain amount of control over the allocation of their attentional resources but task design also plays a role in how attention can be manipulated by the educator toward specific linguistic properties:

> We have some freedom to pay attention to one stimulus (or some feature of a complex stimulus) over another. A great deal of language teaching practice is founded on the premise that learners can attend to different aspects of the target language and that one of the important functions of teaching is to help focus learners' attention. (Schmidt, 2001, p. 14)

One of the claims in support of task-based instruction is, therefore, that tasks that are designed well can in fact draw learners' attention toward a desired target language form that may otherwise go unnoticed by the learner.

With respect to incidental learning and its relationship to attention and noticing, it is important to underline that although attention and noticing are necessary for L2 learning to occur, this does not mean that intentionality is also by implication a requirement for language learning. Attention can be involuntarily drawn to certain stimuli and therefore learners need not intentionally focus their attention on every aspect of the L2 input they are exposed to in order to learn it. In other words, attending to an aspect of language does not mean the learner must have the intention to attend to it or the intention to learn (Schmidt, 2001).

Noticing and attention are cognitive concepts that are the *sine qua non* of language learning. Without noticing and therefore without attention, input cannot be stored in working memory for future retrieval. According to Schmidt (2001), stimuli that are unattended "persist in immediate short-term memory for only a few seconds at best" (p. 16) and therefore, the necessary condition for storage on a long-term basis is through allocating attention to those stimuli, and in particular to those stimuli that represent new information to the learner and that are relevant for a specific learning domain. For example, in order for a language learner to acquire L2 vocabulary, he or she must attend to both word form as well as meaning. Attention and noticing essentially bring together learner-internal factors (motivation, aptitude, interlanguage, processing ability) and learner-external factors (frequency, task characteristics, context), the juxtaposition of which essentially sets the course of language development for the learner.

3.10 Word learnability, memory, incidental learning, involvement load, and attention: relevance to this study

The preceding sections outlining the complex process that is lexical acquisition, in addition to the theories of lexical processing and memory, serve as the underpinnings of the main thesis explored in the present study, which is that in spite of the many factors at play in the language acquisition process, it is possible to facilitate that process by adopting language learning/teaching strategies that exploit those factors within the input learners are exposed to. Song is argued here to be precisely the kind of language learning/teaching tool that can facilitate the lexical acquisition process because of its unique combination of written language in context and aural text, both of which, as this study argues, support the lexical acquisition process by providing learners with the kind of input research in language acquisition has shown to optimize learning.

Section 3.2.1 outlined the importance of frequency on lexical acquisition and section 3.5.1 discussed the impact of context on that same process. These sections referred to a number of studies providing evidence as to the effect of both factors on lexical retention and recall. Popular songs are, quite simply, L2 texts set to music and are, therefore, excellent examples of authentic language in context. Just as reading L2 texts has been shown to increase the vocabulary of L2 learners (Nagy, Herman, and Anderson, 1985; Nation and Coady, 1988; Paribakht and Wesche, 1997) this study argues that song can also lead learners to increase their L2 lexicon by virtue of the fact it too can be considered a historical text written (most generally) in a language that is reflective of current usage. Because song is a text, it also provides learners with concrete examples of how certain lexical items are used morphologically, syntactically, and pragmatically. In addition to providing learners with the experience of both hearing and reading a text, songs also provide the added effect of increasing learners' frequency of exposure to the

target language. As noted in section 1.3.3, popular songs tend to be repetitive in nature, not only in terms of melody but also with respect to lyrics, thereby exposing learners to the same lexical items numerous times. Frequency of exposure has, in many cases, been positively linked with gains in lexical acquisition (Rott, 1999; Hulstijn, 1992; Paribakht & Wesche, 1997).

The crucial role of phonology not only at the pronunciation/reading level but also at the level of memory storage was described in sections 3.3.2 and 3.8 respectively, highlighting the importance of phonological rehearsal to the acquisition of the L2 lexicon. A song, while also a written text, is primarily an auditory experience, implying that not only are learners exposed to words in context but they are also *hearing* those words in context and therefore also hearing the phonemes of the L2. In terms of facilitating lexical retention, song has, as highlighted in section 2.3, been found to play a significant role in the recall of words, both in the short-term and in the long-term, because of the strong connections listeners make between the lyrics and the melody. In addition to familiarity with an L2's phonological system, there is evidence (as outlined in section 2.2.4) to support the claim that songs can promote the kind of subvocal rehearsal that is necessary to maintaining words in short-term memory and their eventual storage in long-term memory, implying that this subvocal rehearsal also strengthens the learner's familiarity with, and possibly even production of, the L2 phonemes. Drawing from Barber's (1980) and Murphey's (1990b) suggestion that song can act as a din, allowing the lyrics to be repeated over and over in one's mind, this study argues that the nature of song is such that when L2 learners listen to an Italian popular song, they are likely to 'rehearse' that song subvocally even after only a few exposures to it, allowing the phonological aspects of the target language to become consolidated in the learner's mind and acquisition to take place.

Section 3.5 outlined the merits of incidental learning as it pertains to lexical acquisition while section 3.7 expounded the involvement load hypothesis and provided evidence as to its efficacy in promoting lexical retention. Numerous studies have argued that learners are able to and in fact do acquire L2 vocabulary without explicit instruction when they are reading for meaning (Elley and Manghubai, 1983; Pitts, White, and Krashen, 1989; Hulstijn, 1992) and that this learning results from their attention to and noticing of features of the L2. Song is an ideal means through which to present the L2 lexicon without explicitly instructing learners in that lexicon because, as noted previously, it is a text learners can decipher in an attempt to understand the context and the song's rhythm and melody may also naturally draw learners' attention to the lyrics. It is also an ideal means through which to put into practice the tenets of the Involvement Load Hypothesis, which suggests that words are better learned when learners do more with them on both the cognitive and motivational levels. Because of the fact popular songs broach topics that are typically universal to the human experience, most language learners can relate to them and therefore are more likely to find relevance in them and be motivated to understand and want to use the language as it is used in the song. Hence, song may be a vehicle through which to maximize involvement load. Relevance and motivation have, as has also been discussed here, been shown to be important factors in the L2 learning process and therefore, a learner who deems a particular text to be appropriate to his/her life experience will likely be more motivated to pay attention to and notice the lexical items in the text and therefore, more likely to acquire and retain those items.

Song may be an ideal vehicle for the facilitation of lexical acquisition because of its unique makeup as both a written and oral text that provides the language learner with the kind of input and learning environment that the research on language acquisition has shown to optimize the language acquisition process. It is for this reason that it is hypothesized that the experimental

groups in the present study that are exposed to an Italian popular song will better acquire and retain the lexical items in that song than those experimental groups that are not exposed to the song's melody.

In the following chapter, the experiment that was carried out in this study is described in detail, including the participants who took part in the study, the hypotheses being tested, the various instruments used to carry out the experiment, the lexical items under investigation, and the procedures involved in executing the study.

4 Methods and procedures

The purpose of this chapter is to describe the methodology of data collection and analysis utilised in the present study on the pedagogical use of Song to enhance learners' receptive and productive vocabulary. The first section presents an overview of the study. The second section describes the hypotheses that will be tested in the experiment while the third examines the design of the experiment. The fourth section of the chapter presents a detailed description of the participants who took part in this study. The fifth section outlines the materials that were utilised to carry out the study. The sixth section examines the lexical items that were the focus of acquisition in the study and the final section outlines the scoring procedures adopted with respect to the treatment tests.

4.1 Overview of the study

The purpose of this study is to examine the effects of two factors on incidental lexical acquisition: 1) Song 2) Involvement Load. The participants who took part in this study were

second-semester L2 Italian learners, each of which was enrolled in one section of an introductory Italian course at a university in the Greater Toronto Area (GTA). The participants were randomly divided into five groups, four of which were treatment groups while one was a control group. All of the participants completed a vocabulary knowledge pretest. One week later, all participants (with the exception of the Control Group) were exposed to 20 lexical items either through a Song and printed lyrics or through a recorded reading of the Song lyrics (Lyrics Only) and the printed lyrics. Participants listened to the Song or lyrics only twice. Immediately following the second audition, participants completed a number of tasks, the nature of which was determined by the treatment group to which they belonged. The following week, during the final session, participants listened to the Song or lyrics two additional times. Immediately following the last audition, participants completed more tasks that were tailored to their respective group. Two weeks and four weeks later respectively, all participants (including the Control Group) completed a posttest and delayed posttest. On both posttests, participants were asked to rate their knowledge of 26 lexical items (20 target items and six distracters) on a scale of one to five. Pretest and posttests were scored and all of the data were submitted to repeated measures analysis of variance (ANOVA) that included Time as a within-subjects variable and presence/absence of music (Song) and Involvement Load as between-subjects variables.

4.2 Hypotheses

Hypotheses that are tested in this study are based on research findings pertaining to music and its influence on retention, on theoretical notions of lexical acquisition, and on the Involvement Load Hypothesis, all of which have been discussed previously. The hypotheses will be presented in general terms so as to present the main issues that are under investigation in this study.

4.2.1 Hypothesis 1: On treatment groups vs. Control Group

Hypothesis 1: All treatment groups will outperform the Control Group on the posttest and delayed posttest.

Rationale: The literature on L2 lexical acquisition suggests that mere exposure to words is not sufficient for their acquisition but rather that context, repetition, phonological awareness, and rehearsal are necessary conditions for acquisition. As such, it is highly improbable that participants in the Control Group, whose only contact with target lexical items is via the pretest, posttest, and delayed posttest, perform better than any of the treatment groups whose level of exposure to and interaction with target lexical items is much greater.

4.2.2 Hypothesis 2: On Involvement Load

Hypothesis 2: The High Involvement groups will outperform the Low Involvement groups on the posttest and delayed posttest.

> **Hypothesis 2A**: The Song/High Involvement group will outperform the Song/Low Involvement group on the posttest and delayed posttest.
>
> **Hypothesis 2B**: The Lyrics/High Involvement group will outperform the Lyrics/Low Involvement group on the post test and delayed posttest.

Rationale: The literature on vocabulary acquisition is clear: the greater the richness of context, frequency of exposure, and attentional resources allocated, the better lexical items will be retained over the longer term. As a direct corollary to these conclusions, the work of Laufer and Hulstijn (2001) provides convincing evidence that in fact, classroom tasks that place greater cognitive demands on participants and that allow participants to 'do' more with lexical items lead to better learning outcomes in L2 learners in terms of their retention of and knowledge of those lexical items. Based on this finding, the activities created for the high involvement groups

were designed specifically with the purpose of maximizing involvement load. By contrast, the activities created for the low involvement groups were designed with the intention of minimizing participants' involvement load and as a result, it is expected that all of the groups taking part in high involvement load activities will outperform low involvement groups on both the posttest and delayed posttest.

4.2.3 Hypothesis 3: On Song

Hypothesis 3: The treatment groups that are exposed to Song will outperform the groups that are only exposed to the lyrics on the posttest and delayed posttest when Involvement Load is kept constant.

> **Hypothesis 3A**: The Song/High Involvement group will outperform the Lyrics/High Involvement group on the posttest and delayed posttest.
>
> **Hypothesis 3B**: The Song/Low Involvement group will outperform the Lyrics/Low Involvement group on the posttest and delayed posttest.

Rationale: Exposure to music has been shown to lead to better retention of lyrics (Crowder et. al, 1990; Wallace, 1994), suggesting that there is a significant physical interaction between a melody and its accompanying text and that a melody provides heightened awareness of lexical items in the text. In addition, research on the interaction between a melody and its accompanying text suggests there is a physical interaction between a melody and its lyrics, leading to submelodic changes in the melody as a result of the specific pairing of a melody and a particular text. Research on human memory also posits that there is an important relationship between the phonological awareness of words, their storage in short-term memory, and their ultimate consolidation in long-term memory (Baddeley & Hitch, 1974; Baddeley 1995; Gathercole & Baddeley, 1993). According to Baddeley and Hitch's Working Memory model, the human memory store contains a secondary storage component, the Phonological Loop, responsible for

short-term storage of the phonological information of language and which, through articulatory rehearsal, maintains that phonological information in short-term memory which ultimately leads to storage in long-term memory. Furthermore, research suggests that phonological short-term memory is also involved in productive vocabulary and that saying words out loud leads to faster learning and better retention of words (Seibert, 1972; Service, 1992; Ellis and Beaton, 1993a; Papagno, Valentine, and Baddeley, 1991). Finally, studies in second language acquisition suggest that the Din phenomenon, which refers to the rehearsal of a foreign language in one's mind, can lead to better retention and possibly to better production of words. This hypothesis suggests that the Din can be reinforced by a melody, making the foreign language words more memorable as a result. In other words, the music din is merely articulatory rehearsal at play. Since the sounds of language are of such importance to both the short-term and long-term storage of words and to their production and since song and lyrics have been shown to be inextricably linked to the point that in tandem they promote better retention of lyrics, the present hypothesis suggests, then, that song is a heightened form of articulatory rehearsal, thereby facilitating retention of the L2 lexicon. For this reason, it is posited that groups exposed to music will score better on the posttest and delayed posttest than groups only exposed to lyrics.

4.2.4 Hypothesis 4: On Song vs. Involvement Load

The variable Song leads to greater learning outcomes than the variable Involvement Load.

Rationale: Although involvement load has been suggested as a reliable predictor of lexical retention, research on the importance of articulatory rehearsal and on the impact of music on retention suggests that song provides a singular combination of rhythm, context, and a plethora of linguistic information such as the number of syllables in a line of text, the number of stressed syllables in that line of text, and perhaps most importantly, phonological information, all of

which can facilitate attention and noticing and promote rehearsal. Articulatory rehearsal, as posited by the Working Memory model advanced by Baddeley & Hitch (1974), is part and parcel of the model's theorized slave system, the Phonological Loop, which, it is posited, allows information stored in the short-term memory to then be consolidated in long-term memory. While high involvement load tasks, as Hulstijn & Laufer (2001) posit, allow L2 learners to 'do more' with target lexical items in terms of cognitive processes and therefore facilitate the acquisition and retention of those items, the additional richness of information provided by song is hypothesized to play a greater role in lexical retention than involvement load alone. Song, as discussed in section 2.3, provides unique cues to memory that result from the strong connection between a melody and its lyrics, a connection that has not been suggested in the literature on task-induced involvement load. In addition, song promotes the kind of subvocal rehearsal that is necessary for the kind of long-term retention that is desirable in second language acquisition. There is, to date, no suggestion in the literature on task-induced involvement load that involvement load provides the kind of articulatory rehearsal that, like song, can facilitate the retention of lexical items.

4.3 Participants

The participants who were recruited for this study were all second-semester students of an introductory Italian course at a university in the GTA and were enrolled in one of a number of different sections of the course being offered (i.e. participants were not all taught by the same instructor). The course from which participants were recruited is meant for students with no prior schooling in the Italian language.[21] Participants were solicited at the beginning of the Winter term (i.e. second semester of study) and therefore had limited knowledge of and exposure to

[21] It should be noted, however, that students familiar with Italian dialect are also admitted to the course.

Italian. Despite the fact that intact classes are utilised in this study, the manner in which students had registered for their respective sections was arbitrary. That is, students chose a particular section of the course based on their individual timetables. In addition, each course section followed the same syllabus and utilised the same course textbook. As such, there is no reason to suspect that there would be significant variance among the groups in terms of vocabulary knowledge at the outset of the study.

Prior to the treatment sessions, each participant was asked to complete a brief questionnaire that solicited biographical as well as language background information, including gender, age, year of postsecondary study, native language, knowledge and level of competence in an L2 and beyond, language habits, and level of exposure to Italian outside the classroom. As Table 4 indicates, the division of participants among groups reflects a fairly equitable distribution in terms of these characteristics, making each group roughly equivalent to the others. Table 4 also illustrates that there were 53 females and 13 males participating in the study, for a total of 66 participants. In terms of age, 57 participants were between the ages of 17 and 21 (or 86.4% of the total number of participants), 6 participants were 22-25 years of age (9.1%), 2 identified themselves as belonging to the 26-29 age category (3.0%), and one subject fell in the 30+ age group (1.5%). For all groups, the largest proportion of participants consists of participants falling in the 17-21 age group. Participants were also at different stages in their postsecondary education, although each treatment group reflects a similar distribution of participants in terms of programme year, with the largest majority of participants in each group being in their first year of postsecondary study. Forty-one (41) participants (62.1%) were in their first year of university study, 14 (21.2%) were second year students, 3 participants (4.5%) were in their third year, 7 students (10.6%) were in their fourth year, and finally, one subject (1.5%) was not enrolled in a degree programme. In terms of sex, there is a predominance of female

participants in this study, making up 53 (80.3%) of the 66 participants. The 13 males (19.7%) were distributed fairly equitably across groups.

Table 4: Participants' L1, Age, Sex, and Programme Year by Experiment Group

Experiment Group	Total	L1 Group: Ns	Age Groups: Ns	Sex (Male/Female)	Programme Year: Ns
1	17	English: 6 Romance: 1 Other: 10	17-21: 17 22-25: 0 26-29: 0 30+: 0	5 / 12	0: 0 1: 14 2: 2 3: 3 4: 1
2	10	English: 6 Romance: 2 Other: 2	17-21: 10 22-25: 0 26-29: 0 30+: 0	3 / 7	0: 0 1: 7 2: 2 3: 1 4: 0
3	13	English: 7 Romance: 1 Other: 5	17-21: 10 22-25: 2 26-29: 1 30+: 0	2 / 11	0: 0 1: 7 2: 3 3: 1 4: 2
4	10	English: 3 Romance: 1 Other: 6	17-21: 9 22-25: 1 26-29: 0 30+: 0	0/ 10	0: 0 1: 6 2: 2 3: 2 4: 0
5	16	English: 8 Romance: 3 Other: 5	17-21: 11 22-25: 3 26-29: 1 30+: 1	3 / 13	0: 1 1: 7 2: 5 3: 1 4: 2

In terms of language background, the situation is quite complex: a large number of languages are represented in the participant pool of this study, reflecting the ethnic and linguistic diversity of Canada's largest urban centre. For this reason, a thorough examination of the L1 and L2 language background of participants was warranted. Due to the sheer number of languages that participants declared as L1s, the participants were divided into language categories as follows (see Table 5): English, Romance, Indo-European but not English or Romance, Non

Indo-European. The distribution of participants' L1 shows that 30 participants (28.3%) consider English to be their L1. Six participants (9.1%) consider a Romance language to be their L1, while for fourteen participants (21.2%) an Indo-European language that is neither English nor a Romance language is an L1. Finally, 16 (24.2%) participants declared a non Indo-European language as an L1. In terms of distribution of L1s across groups, as Table 4 shows, with the exception of treatment groups 1 and 4, all groups have a predominance of English L1 speakers. Nonetheless, each group also includes a strong presence of participants for whom English is not an L1.

Table 5: Participants' L1

Language	Frequency	Valid Percent
English	30	45.5
Romance	6	9.1
Indo-European Not English Not Romance	14	21.2
Non Indo-European	16	24.2

With respect to the L2, Table 6 indicates that 31 participants (46.3%) consider English to be an L2, followed by 29 participants (43.3%) who consider a Romance language to be an L2. Five participants (7.5%) consider a language other than English or a Romance language as an L2 while 2 participants (3.0%) report no knowledge of an L2.[22]

[22] It should be noted here that participants were told they could include the knowledge of Italian, however limited, they had acquired in the six months of studying the language formally in their current introductory course as an L2.

Table 6: Participants' L2

Language	Frequency	Valid Percent
None	2	3.0
English	31	46.3
Romance	29	43.3
All others	5	7.5

In addition to asking participants to indicate the name of the languages they are familiar with, the questionnaire also required participants to rate their level of proficiency in terms of listening, speaking, reading, and writing for each of the languages they know on a scale from 1 to 5 where 1 is 1ow proficiency and 5 is high proficiency. While the questionnaire asked participants to indicate familiarity with an L3 or L4, it was clear from participants' own rating of their proficiency in listening, speaking, reading and writing an L3 and L4 that the vast majority were not significantly familiar with either an L3 or L4 that this knowledge could have significant bearing on their test scores. As such, participants' self-reported proficiency in languages other than the L1 were examined and the language whose proficiency ratings were highest were deemed to be a participant's L2 for the purposes of this study.

The final question on the questionnaire asked participants to declare, by circling 'yes' or 'no', whether Italian is spoken in their home situation and by whom. As Table 7**Error! Reference source not found.** shows, 51 of the 66 participants (77.3%) claimed that no one in their home speaks Italian while 15 participants (22.7%) indicated that someone in their household does speak Italian.

Table 7: Exposure to Italian in the Home

Italian spoken at home	Frequency	Percent

No	51	77.3
Yes	15	22.7
Total	66	100

Despite the issue of cognates and their role in the L2 acquisition process, no participants were eliminated from the study based on their L1 or their familiarity with particular languages beyond the L1 since this would have dramatically reduced the pool of potential participants. As Table 5 and Table 6 show, the decision to include only those students with no background knowledge of any other Romance language would have dramatically reduced the number of participants in the study, thereby affecting the power of the study. Furthermore, given the variety of linguistic backgrounds that are present in the participant pool as L1s and L2s, it would be nearly impossible to determine whether any or all of the lexical items being studied here could be considered a cognate, partial cognate, or false cognate with respect to each of the languages in question. In addition, the university the participants attend is a diverse university campus and therefore the sample of participants used in this study is reflective of that diversity and is therefore representative of the reality facing Italian language educators and learners alike in the GTA.

Finally, this study examines participants' retention of lexical items under two learning variables: 1) the presence or absence of music (Song); 2) high/low involvement load. As such, participants were randomly assigned to one of five groups divided among the five different course sections. Four of the groups were treatment groups while the fifth group was a control group. As Table 4 shows, all groups were roughly comparable to one another in terms of the distribution of age, sex, programme year, and L1 of participants included within each group.

Across all groups, few participants were L1 speakers of a Romance language while the vast majority were L1 speakers of English, though one group (Group 1) comprised participants whose L1 was neither English nor a Romance language. With respect to age, the overwhelming majority of participants in each group fell in the category 17-21. As for gender, all groups with the exception of one (Group 4) comprised a mix of males and females, though all groups consisted of a majority of female participants. Finally, in terms of year of programme, the majority of participants in each group were first-year students though there was some representation from upper year students in each group as well. In summary, the groups utilised in this experiment reflect a general equivalency in terms of their respective participants, whose features can be summarized as follows: English L1, 17-21 years of age, largely female, and first-year student.

4.4 Instruments

4.4.1 Pretest: Vocabulary Knowledge Scale (1)a)i)(1)(a)(i)Appendix D)

Prior to beginning the treatment sessions, the researcher attended each of the five sections of Introductory Italian and presented participants with a modified version of Paribakht and Wesche's (1996) Vocabulary Knowledge Scale questionnaire. This particular lexical knowledge testing tool was selected over others for its ability to measure with reasonable accuracy current levels of both receptive and productive vocabulary knowledge as well as vocabulary growth in both of those knowledge areas over time. The questionnaire contained 26 lexical items consisting of a combination of nouns (n=14), verbs (n=11), and adverbs (n=1). Twenty (20) of these items were taken from the lyrics of the Italian popular song *Gli ostacoli del cuore* (Appendix E) while six (6) were distractors, selected from previously studied chapters of the participants' course

textbook, *Adesso!*. As such, the distractors consisted of lexical items the participants should have already acquired and they are as follows in Table 8:

Table 8: **Distractor Words and Their Respective English Translations**

Distractor	English translation
bambino	n. child
regalo	n. gift
fratello	n. brother
tempesta	n. storm
nevicare	v. to snow
capire	v. to understand

The presence of the distractors in the study was meant to eliminate suspicions the participants may have had during the study that none of the lexical items was known to them and therefore cause them to become discouraged by the test and consequently lower their level of motivation to complete the test to the best of their ability. The distractors also reduced any suspicions the participants may have developed that they were being tested on their vocabulary retention, a realization which could compromise the integrity of the study as an experiment in incidental learning. The other 20 lexical items (see Table 9) being examined in the study should have been largely unfamiliar to the participants since they had not been explicitly taught in the course at the start of the experiment and participants had likely not encountered them at any point in the course of their study of Italian.

Table 9: Target Lexical Items and English Translations

Target lexical item	Part of Speech	English translation	Frequency

principio	noun	principle	48
magia	noun	magic	9
ostacolo	noun	obstacle	18
cuore	noun	heart	45
attaccare	verb	to attach	19
volentieri	adverb	gladly, willingly	19
allegria	noun	happiness	40
morire	verb	to die	7
scartare	verb	to unwrap	17
pacco	noun	package	294
tenere	noun	to hold	1
coccolare	verb	to cuddle	25
pensiero	noun	thought	12
segreto	noun	secret	491
naufragare	verb	to become shipwrecked	6
dondolare	verb	to sway, rock	1
sentire	verb	to hear	65
buttare	verb	to throw away	0
portare	verb	to carry	1110
rumore	noun	noise	9

The purpose of the Pretest was to determine the level of knowledge each participant had of each lexical item at the start of the study so that vocabulary growth (and/or attrition) over time could be ascertained using the results of the Pretest as a baseline against which to compare scores

from the subsequent Posttest and Delayed Posttest. As such, for each lexical item, participants were required to circle the response that best described their current familiarity with the item, as in Table 10. The lexical items, including the distractors, were presented to the participants in random order.

Table 10 : Vocabulary Pretest Lexical Knowledge Scale (Self-Report)

1.	I don't remember having seen/heard this word before.
2	I have seen/heard this word before, but I don't know what it means.
3.	I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4.	I know this word. It means _____ .(provide a synonym or translation)
5.	I can use this word in a sentence:_____. (**If you do this section, please also do section 4.**)

4.4.2 Lyrics

A printed copy of the lyrics to the Song *Gli ostacoli del cuore* was provided to each participant. Two versions of the lyrics were prepared, one (Appendix F) for distribution to those participants belonging to the High Involvement groups and another (Appendix E) destined for those participants in the Low Involvement groups. The lyrics distributed to the high involvement load participants did not contain any other information beyond the lyrics themselves. However, the lyrics distributed to the low involvement load participants contained marginal glosses of the target words. The rationale for the marginal glosses is based on Hulstijn and Laufer's (2001) hypothesis that glossing induces a low involvement load across all variables of Need, Search, and Evaluation:

> A reading comprehension task where unknown words are glossed for the student, but the comprehension questions can be answered without reference to these words does not induce any need to focus on the glossed words (since they are irrelevant to the task), nor any search for their meaning (since they are glossed), nor any evaluation. (16)

Since the low involvement load participants were meant to interact minimally with the target words, the marginal glosses facilitated this goal.

4.5 Rationale for song and target word selection

As was discussed here previously, SLA research has shown incontestably that learners are more likely to retain what they are taught in an L2 classroom if the material that is presented to them is relevant to their reality. In addition, frequency of exposure and frequency of occurrence in a language has also been linked to better retention (see section 3.2.1). Lexical items that have concrete referents are also more likely to be retained (see section 3.2.6). Finally, with respect to music and retention, it has already been pointed out here (see Chapter 1) that melodic repetition can facilitate the retention of text. As such, in choosing which song to adopt in this study, the main criteria that were adopted included the following: a repetitive melody and lyrics, lyrics that contain many concrete lexical items, lyrics that contain lexical items of relatively high frequency of occurrence, and lyrics that refer to a theme or topic that would likely be of interest to young adults. The Song *Gli ostacoli del cuore* was selected for this study because it fulfilled all of these requirements. For instance, it contains both verses and a refrain whose respective melodies are both simple and repeated throughout the Song, making it relatively easy for listeners to acquire them quickly. Furthermore, the main theme of the Song is love and the lack of transparency that lovers bring to a relationship, a theme that was deemed to be appropriate for the age group of the participants in terms of its applicability to their reality and life experience. In addition, the Song's lyrics contain lexical items that are generally highly

concrete; that is, there are few abstract concepts, making it easy for listeners to make mental connections between the lyrics and images, another aspect of language acquisition shown to be effective at promoting recall (see section 3.3.1). With respect to frequency of occurrence, Table 9 provides the frequency scores for each of the target words utilised in this study.[23] Words with a frequency score <100 were deemed to be low frequency while words with a frequency >100 were deemed to be high frequency. As can be ascertained from the lyrics (Appendix F), *Gli ostacoli del cuore* contains a combination of both low frequency and high frequency lexical items.

4.5.1 High involvement load activities

As mentioned previously, Hulstijn and Laufer (2001) hypothesize that a higher involvement load leads to better lexical retention in L2 learners. For this reason, a set of activities aimed at maximizing the involvement load for target lexical items was created (Appendix H). Each activity was given a rating of level of involvement load based on Hulstijn and Laufer's (2001) paradigm. As outlined in Table 11, each individual activity was given a score of 0, 1 or 2 based on that activity's involvement load in each of the areas of Need, Search, and Evaluation, which, as discussed previously, are the criteria Hulstijn and Laufer hypothesize to be relevant for lexical acquisition. A rating of 0 implies that that particular factor is absent from the required activity while a score of 1 indicates moderate involvement and a score of 2

[23] The frequency dictionary utilised to calculate frequency of occurrence is the BADIP (Banca Dati dell'Italiano Parlato), currently the only Italian frequency dictionary available in online format. This particular frequency dictionary hosts the 490,000 word *LIP* (Lessico dell'italiano parlato) corpus, which is the largest corpus of spoken Italian currently available. The corpus was collected between 1990 and 1992 by a team of researchers led by T. DeMauro of Università La Sapienza in Rome and consists of 469 texts collected in Italy's 4 major cities: Florence, Milan, Naples, and Rome. The texts are based on the following types of communication formats: a) bi-directional exchange, face to face, with free turn-taking (e.g. conversations at home, at work, or at school); b) bi-directional exchange, not face to face, with free turn-taking (e.g. telephone conversations);c) bi-directional exchange, face to face, with regulated turn-taking (e.g. legislative assemblies, trade union assemblies, cultural debates, oral exams at school or university, interviews); d) mono-directional exchange, with the addressee being present (e.g. school or university lectures, presentations at scientific meetings, political speeches, sermons); e) distanced unidirectional exchange (e.g.radio or television programs)

indicates high involvement. The first activity from this set, activity 1a), required that participants infer the meaning of the words *cuore, attaccare, buttare, ostacoli*, and *pacco* based on the context of the Song/lyrics and to choose the best definition out of those provided. Participants were encouraged to negotiate their inferences with their peers. Since the target words were not glossed in the lyrics and since the participants' ability to complete the activity hinged on their capacity to infer the correct meaning of the target words in addition to negotiating the meaning with their peers, the Need component of the task-induced involvement construct was deemed to be high (2). In addition, seeking out the best meaning out of those that are provided implies a moderate Search (1) and finally, since one of the target words in this activity is polysemous (*attacca*, meaning either 'to attach' or 'to attack'), this implies that the participant must decide which meaning fits the context of the Song and hence there is moderate Evaluation required (1). In the next exercise, 1.b), participants were asked to verify their answers from 1.a) by looking up the words in an Italian-English dictionary. They were then required to write an original sentence in Italian, illustrating the context-specific meaning of the given words. Since the task required that participants look up the words in a dictionary, the Need component involved is moderate (1) as well as the Search component (1). Additionally, since at least one of the words in the activity is polysemous, the participants were required to make a decision based on the context of the Song lyrics as to which meaning best reflected that context and hence there was moderate Evaluation involved (1). Exercise 2 consisted of a cloze exercise that included 12 sentences, each containing one blank. Participants were required to determine which word from a word bank of 15 best fit in each blank. The words in the word bank consisted of 12 of the target words from the study and 2 distractors. This activity carried moderate Need (1), since the task was imposed by the researcher and it also carried moderate Search (1) since there were a limited number of options available to the participants to choose from. Finally, this cloze activity could

also be deemed to carry a moderate level of Evaluation (1) since a limited number of possible options were available to the participants and they were merely required to recognize the difference between these given words. The final activity was a short composition in which participants were asked to write about their thoughts on secrecy in personal relationships. Participants were asked to write approximately 10 sentences (in Italian) in any genre they wished (paragraph, dialogue, diary entry, etc.) and to present their point of view on the topic. Participants were also asked to include the words *tenere, segreti, pensieri, principio,* and *portare* at least once in their work. In this activity, Need was deemed high (2) because the activity, although imposed upon the participants, also asked participants to express their own ideas in their own way about a topic relevant to their age group, implying that the need to communicate these ideas would likely be strong. Search was deemed high (2) since participants had not been asked to utilise these particular words previously and therefore were required to infer their meaning(s) from the context of the lyrics. Additionally, since this type of activity requires words be utilised in original sentences and in combination with other words, decisions must be made on the part of participants with respect to how the words best fit together and, therefore, this provides rationale for considering Evaluation to be strong (2).

Table 11: Task-Induced Involvement Load for High Involvement Groups

Task	Status of target words	Need	Search	Evaluation	Total Load
1. a) Reading and comprehension question	Not glossed but relevant to task	2	1	1	=4
1. b) Writing original sentences	Not glossed but relevant to task	1	1	2	=4
2. Cloze exercise	Not glossed but relevant to task	1	1	1	=3

3. Writing a composition	Theme selected by researcher and provided in L1, participants required to look up L2 forms.	1	2	2	=5

4.5.2 Low involvement load activities

In addition to high involvement activities, a series of activities deemed to be low in terms of involvement load was also created specifically for those treatment groups assigned to Low Involvement groups. These activities required limited if any engagement with the target words in the study and were designed so that a fairly accurate determination could later be made as to whether or not involvement load in combination with the presence or absence of Song influences lexical acquisition. As Table 12 illustrates, the involvement load corresponding to each activity's factors of Need, Search, and Evaluation with respect to the target words in the study is either low or largely absent.

Table 12: Task-Induced Involvement Load of Low Involvement Groups

Task	Status of target words	Need	Search	Evaluation	Total Load
1.Reading and comprehension question	Glossed and irrelevant to task	0	0	0	=0
2. Reading and comprehension question	Glossed and irrelevant to task	0	0	0	=0
3. Writing original sentences (in English)	Glossed and somewhat relevant to task	1	0	0	=1

4. Cloze exercise	Glossed and irrelevant to task	0	0	0	=0
5. Writing original sentences (in English)	Glossed and irrelevant to task	1	0	0	=1

Exercises 1 and 2 from this activity sheet consisted of questions posed in Italian. Exercise 1 required that participants answer in Italian the question "Quanti anni ha l'autore? Giustifica la tua risposta" (How old is the author? Justify your answer). As such, participants were not required to utilise or pay attention to any of the target words in order to answer the question, but rather were asked to formulate an opinion based on the general context of the lyrics as a whole and on who they thought the singer/author was. For this reason, there is absence of the factor Need (0) since the participants did not need to understand any target word. There is absence of the factor Search (0) since the participants did not necessarily require an understanding of the meaning of the target words in order to complete the activity and there is absence of the factor Evaluation (0) since participants did not have to evaluate the meaning of any target word against another Italian word. Similarly, Exercise 2 consisted of a 'True or False' activity whose questions were created specifically with the intention of avoiding involvement with the target words. The answers to the questions were found in sections of the Song/lyrics that did not contain or require an understanding of the target words. Once again for this reason, the factors of the task-induced involvement load were each rated as absent: Need (0), Search (0), Evaluation (0). Exercise 3 was posed in English and participants were asked to answer in English, thereby reducing even further their involvement with the target words. The activity required participants to "Explain the irony of the 2nd strophe." In this case, the participants did need to understand the meaning of some of the target words contained in the strophe in order to answer the question.

However, the students were not required to focus on those target words, they were not asked to infer or look up the meanings of the words, nor were they required to utilise the target words in their answer since the answer was to be completed in English. For this activity, there is a moderate level of Need (1) since the participants would likely have had to look at the marginal glosses given to them in the lyrics in order to familiarize themselves with the meaning of the target words as well as the context of the Song, but there is absence of Search (0) and Evaluation (0) since the meanings were provided to them. Exercise 4 consisted of a cloze exercise where participants were required to provide the correct missing lyrics. None of the deleted lyrics were target words and therefore, the activity merely required recall of non-target words, thus inducing no Need, no Search, and no Evaluation of any target words. Finally, Exercise 5 involved answering the following question: "Why does the author say 'Quante cose che non puoi sapere' ['There are so many things you can't know'] in the second last strophe? Do you agree with this statement? Why or why not?" Participants were asked to respond in English, thus once again requiring limited or no involvement with the target words. Participants were not required to refer to any specific target word, though they may have glanced at the glosses in order to clarify target word meanings in order to understand the Song's context. For this reason, there is a moderate Need (1) but once again, no Search and no Evaluation required since glosses were provided.

4.5.3 Posttest: Vocabulary Knowledge Scale (Appendix I)

The posttest is identical to the pretest in all but the order in which the items are presented. This was done in order to avoid any possible recency effects stemming from participants' completion of the Pretest. The post-test was administered in order to determine the degree to which participants across all groups acquired the target words.

4.5.4 Delayed Posttest: Vocabulary Knowledge Scale (Appendix J)

The delayed posttest is identical to both the pretest and posttest in all but the serial order in which lexical items are presented and this was, once again, meant to reduce any possible recency effects from both the pretest and the post-test, thereby providing the opportunity to glean, in a more realistic way, the true nature of the lexical retention.

4.6 Procedure

Prior to carrying out the present study, a research protocol was submitted to the Ethics Review Committee of the University of Toronto. Following approval of the research protocol, the Chair of the department in which the study would take place was contacted. Upon receiving approval from the Chair, each instructor in whose class the study could potentially be carried out was contacted. Following receipt of instructors' permission, each class was visited separately and a Letter of Information (see Appendix A) was distributed. Students were told explicitly that none of their personal information would ever be revealed in any way and that all reporting would be done in aggregate, thereby ensuring participants' anonymity. Interested participants were then asked to sign the Letter of Consent (Appendix B). Throughout the study, each course instructor whose students were participants in the study was asked to step out of the classroom for the duration of the sessions in an attempt to eliminate any bias the instructor may have with respect to student participation in the study. The instructor's absence was also meant to alleviate any undue pressure or anxiety on the part of participants with respect to performance that could interfere with the acquisition process. In fact, participants were told that they were not being 'tested' in the usual sense of the word and that any and all answers would provide valuable information. All sessions related to this study were carried out during regular classroom hours in an attempt to maximize attendance at all sessions and to limit any additional responsibility of

participants. Although the number of participants fluctuated in any given session, care was taken to ensure the sessions were as uniform as possible and this was aided by the fact that the researcher administered all tests and conducted all sessions.

The present study aims to adhere to the principles of incidental learning which, as Schmidt (1994) claims, can be defined as learning without the intention to learn, learning one thing while paying attention to another, and learning formal features such as grammar through a focus of attention on semantic features such as communication. In keeping with the incidental learning research paradigm, whose premise is that participants are not told in advance that they will be tested on their recall of lexical items, participants in the present study were told they would be participating in a study examining the effects of different teaching techniques on language learning; however, they were not explicitly told that the study was specifically targeting the effects of music on vocabulary acquisition, nor that their vocabulary retention would be tested. Each participant was randomly assigned to one of five groups. Each group received a Group Code that was determined by 2 factors: 1) the presence or absence of music during the treatment sessions and 2) the involvement load of the treatment activities. The groups were coded as follows: 1ME (music plus high involvement load); 2LS (lyrics only plus low involvement load); 3LE (lyrics only plus high involvement load); 4MS (music plus low involvement load). The 5th group, coded as 5C, was designated as the Control Group. Within each group, each participant was then assigned a code number that was selected randomly and which was used throughout the study to maintain the anonymity of the participants, thereby diminishing any bias on the part of the researcher.

4.6.1 Session1: Pretest

Upon receiving informed consent from each participant, each of the five groups participated in Session 1, which took place during regular classroom hours shortly after the start of the Winter term (January). During Session 1, all participants were asked to complete the Pretest but were not told what the aim of the test was. Participants were merely told to complete the test to the best of their ability and that it was okay if words were not familiar to them. Participants were given approximately 15 minutes to complete the test, after which the tests were collected and placed in an envelope and sealed.

4.6.2 Session 2: treatment 1

One week following completion of the Pretest, participants took part in Session 2. The Control Group was not involved in Session 2 and as such was not exposed to either the target words or distractors. Groups with 'S' in their code (i.e. 2LS, 4MS) were provided with a copy of the Song lyrics that contained marginal glosses of the target words. Groups with 'E' in their code (1ME, 3LE) were provided with a copy of the lyrics that did not contain marginal glosses. Groups with the letter 'M' in their code (1ME and 4MS) listened to a CD recording of *Gli ostacoli del cuore* (performed by Italian popular singers Elisa Toffoli and Giovanni Ligabue). Participants listened to the Song once and were asked to follow along with the printed lyrics. Groups with 'L' in their code (2LS and 3LE) listened once to a recorded reading of the Song's lyrics only (i.e. no music) and also followed along with the printed lyrics. Participants in the four treatment groups were instructed to listen carefully and to try to understand what they were hearing and reading. Following audition of the Song/lyrics, an activity sheet was distributed to each participant, the contents of which (as described earlier) were dependent upon the group code to which participants belonged. Participants were instructed to work on a few of the activities from the sheet with a partner or group of students. Once participants completed the

requisite activities, they listened to the Song/lyrics a second time. The total duration of Session 2 was approximately 30 minutes.

4.6.3 Session 3: treatment 2

One week following Session 2, Session 3 was carried out and involved listening to the Song/lyrics once, followed by completion of additional activities tailored to the specific group code to which participants belonged. Once all activities from the sheets were completed, participants listened to the Song/lyrics one final time. Session 3 lasted a total of approximately 30 minutes.

4.6.4 Session 4: Posttest

Two weeks following Session 3, and therefore four weeks following participants' completion of the pretest, all groups, including the Control Group, participated in Session 4. This session involved the administration of the posttest, a second version of the Vocabulary Knowledge Scale participants had completed as a pretest prior to Session 1. This particular version (Appendix I) is identical to that of the pretest in all but the serial position in which the lexical items appear. As was mentioned previously, the serial position of the items was deliberately manipulated in order to avoid any possible primacy or recency effects.[24]

4.6.5 Session 5: Delayed posttest

Four weeks following Session 4, and therefore 8 weeks following completion of the initial pretest, participants took part in the final session, Session 5, which involved the completion of a delayed posttest, yet another version of the Vocabulary Knowledge Scale

[24] Primacy effects refer to the tendency for the first items presented in a series to be remembered better or more easily, or for them to be more influential than those presented later in the series. Similarly, recency effects refer to the principle that the most recently presented items or experiences will most likely be remembered best. These two tendencies could have had an impact on test scores in this experiment and for this reason were taken into account in the organization of the items making up the posttest and delayed posttest.

(Appendix J). Once again, the lexical items in this test appeared in yet a different serial position from the previous two versions in an attempt to avoid primacy or recency effects.

4.7 Scoring method

The Pretest, Posttest, and Delayed Posttest utilised in this study were, as mentioned previously, adapted from Paribakht and Wesche's (1993) Vocabulary Knowledge Scale (VKS). The VKS was selected as a testing tool because it permits the discernment of both receptive and productive vocabulary knowledge, meaning that both the depth and the breadth of a subject's lexical knowledge can be ascertained as opposed to merely the breadth as in some other lexical knowledge tests. Lexical acquisition, as has been pointed out here previously as well as in the literature, is not an all-or-nothing process, but rather can be described as one in which different levels or degrees of knowledge can be distinguished. This is why tests that only measure breadth of knowledge are useful in providing general estimates of a subject's overall lexical knowledge for the purpose of, for example, determining the placement of that individual in a language course level, but fall short in that they do not provide any information as to how well specific words are known (Paribakht & Wesche, 1996). That is, they do not allow researchers to see whether or not a participant knows different meanings of words, knows how to use the word correctly in different contexts, knows the syntactic properties of the item, etc., or whether the participant is merely able to recognize the word's written and/or oral form. As Paribakht & Wesche (1996) note, the VKS "captures in a relatively efficient way certain stages in the initial development of core knowledge of given words (for example, their most common meanings[s]). These stages represent gains that are large enough to be meaningful on a self-report scale but small enough to reflect changes in knowledge during relatively limited instructional periods" (p. 8).

The pretest and both posttests were, as mentioned earlier, identical in terms of the lexical items being tested, however, the tests differed from one another in the serial order in which those lexical items were presented. This was done in order to avoid any possible primacy or recency effects that could potentially influence the participants' responses. As is illustrated in Table 13, the pretest was scored in the following way: A score of 1 was given if category I. was circled and a score of 2 was given if category II. was circled. A correct response to category III. resulted in a score of 3, while an incorrect response resulted in a score of 2. For correct answers in categories IV and V, scores of 4 and 5 respectively were given. However, if an incorrect synonym or translation was provided in category IV, a score of 2 was given and if knowledge of the meaning of the word was shown but the incorrect grammatical category was used (e.g. if a target noun was provided as a verb) or for any other error that was not semantic. In the case of polysemes, if one correct translation or synonym of the item was provided but not the translation/synonym reflective of the lyrics' context, a score of 3 was given. For erroneous responses in category V, a score of 2 was given if the incorrect semantic usage of the word was provided in the sentence. A score of 3 was given if correct semantic knowledge of the word was shown in a correct translation/synonym provided but the word was used inappropriately in the sentence provided (e.g. **Il principio di scuola è per insegnare*. [The principle of school is to teach.]) and finally, a score of 4 was given if the word was used appropriately semantically but with grammatical inaccuracy (e.g. **Mi piace coccolato il mio cane*. [I like to cuddled my dog.]). If a participant failed to provide an answer for any one lexical item, no score was given. Mean scores were calculated for each of the testing times by adding the scores participants obtained for each of the 20 target words. In this way, a maximum score of 100 could be obtained on each of the tests since the maximum score that could be obtained for each of the target words is 5.

Table 13: VKS Scoring System and Meaning of Scores

Self-report categories	Possible scores	Meaning of scores
I.	1	The word is not familiar at all.
II.	2	The word is familiar but its meaning is not known.
III.	3/2	(3) A correct synonym or translation is given./(2) An incorrect synonym or translation is given.
IV.	4/2/3	(4) A correct synonym or translation is given./(2)An incorrect synonym or translation is given./ (3) Knowledge of the meaning of the word is shown but the incorrect grammatical category is used or in the case of a polyseme, one correct meaning is given but is incorrect in the context of the lyrics
V.	5/2/3/4	(5)The word is used with semantic appropriateness and grammatical accuracy in a sentence./ (2)The word is not used with semantic appropriateness in a sentence./ (3)The correct semantic usage is adopted but is inappropriate in the sentence provided./ (4) The correct semantic usage is shown but with grammatical inaccuracy.

One of the shortcomings of the VKS that was discovered during the scoring phase is that the test does not accommodate the polysemous nature of words and the acquisition of a variety of semantic meanings. That is, the VKS only requests one synonym or translation for categories 3, 4, and 5 of each lexical item and therefore does not demand that multiple meanings of words be provided. Some of the words included in the present study's VKS are polysemous [*sentire* (to hear, to feel), *principio* (a principle, a beginning), *attaccare* (to attack, to attach), *portare,* (to carry, to wear)]. Upon scoring, it was discovered that participants had acquired one semantic meaning of some of the polysemous items through their regular classroom activities but did not indicate their knowledge of other semantic meanings of those same items, knowledge that would likely only have been derived from exposure to the Song/lyrics. For this reason, in scoring the

two posttests, participants' responses to categories 3, 4, and 5 were only given full credit if the target semantic meaning was given (that is, the semantic meaning as found in the context of the Song/lyrics). Instead, a score of 2 was given if the subject did not demonstrate knowledge of the target semantic meaning.

In the following chapter, Chapter 5, a detailed account of the statistical tests used to analyze the collected data is provided along with the results of those statistical tests.

5 Results

5.1 Introduction

In this chapter, the main findings of the experiment are presented in two sections. The first section provides the statistical tests that were conducted. The second section presents the results in response to each of the hypotheses posed in Chapter 4. The data obtained from this

study were scored according to the method outlined in Chapter 4 and then analyzed using SPSS 17.0 for Windows. For all statistical tests carried out in this experiment, the observed significance was set at .05 ($p \leq .05$).

In order to ascertain whether the participant groups started out with similar levels of lexical knowledge or not, a one-way ANOVA was carried out for the scores of the Pretest. Results, as illustrated in Table 14, indicate that there were no significant differences between groups in terms of vocabulary knowledge at the outset of the experiment ($p=.789$).

Table 14: Results of One-Way ANOVA for T1 Scores

Source	Type III Sum of Squares	df	Mean Square	F	*p*
Group Code	0.17	4	.004	.426	.789
Error	.593	61	.010		

Because of this non significant result, it was then decided that a more meaningful analysis would examine how the four treatment groups performed over time but would exclude the Control Group altogether since its presence in the between-subjects factor Group Code would continue to show no main effect of Time. As such, another Repeated Measures ANOVA was carried out on the data where only scores on target items from treatment groups 1 through 4 were included and where Time was a within-subjects variable with three levels (pretest, posttest, and delayed posttest). This ANOVA revealed a main effect of Time, $F(2,92)=96.483$, $p<0.001$ as well as interactions between pretest and posttest ($p<0.001$) and pretest and delayed posttest ($p<0.001$). However, since at pretest no treatments had yet taken place, including pretest (T1) as a level of the variable Time did not provide clarity as to the relative improvement from pretest to posttest and from pretest to delayed posttest. As a result, a more accurate ANOVA with only two levels

of the variable Time (T2Diff and T3Diff) was carried out. That is, T1 (pretest) was not considered as a level in its own right within the variable Time in the main ANOVA since it was utilised as a baseline from which any improvement in lexical acquisition at T2 (posttest) and T3 (delayed posttest) could be compared. In other words, this ANOVA examines relative improvement in scores between T2 and T1(pretest) and T3 and T1. As such, scores at T1 were subtracted from scores at T2 (T2Diff) and at T3 (T3Diff) respectively, hence the variable Time has only two levels. Song and Involvement Load were between-subjects variables. Finally, only those scores obtained on the target lexical items were included in the ANOVA. That is, scores obtained on the distractor items were not included in the ANOVA since it was assumed these lexical items had already been acquired to some degree as they had been selected from chapters of the course textbook that participants had already studied and been tested on. Any improvement among distractors in terms of type of knowledge (i.e. receptive to productive) could not have been due to the treatment, and therefore their inclusion in the ANOVA was superfluous.

The most important question being addressed is whether or not Song can positively influence the retention of selected Italian lexical items over the longer term. The ANOVA that was carried out on the performance of the four treatment groups on the target lexical items revealed that there is no main effect of the within-subject variable Time on lexical retention, $F(1,46)=2.49$, $p=.121$, between the posttest and the delayed posttest (see Table 15). Additionally, there is no significant interaction between Time and Song, $F(1, 46)=.162$, $p=.689$, or Time and Involvement Load, $F(1,46)=3.277$, $p=.078$. There is also no significant interaction between Time, Song, and Involvement Load, $F(1,46)=.108$, $p=.74$. Put differently, the passage of Time between T2 and T3 (4 weeks) does not seem to have had a significant effect on participants'

lexical retention, bearing in mind that there is indeed a significant main effect of Time between the pretest and the posttest (see Table 16).

Table 15: Results of ANOVA for Within-Subjects Variable Time (T2Diff & T3Diff)

Source	Sum of squares	df	Mean Square	F	*p*
Time	.003	1	.003	2.493	.121
Time*Song01	.000	1	.000	.162	.689
Time*InvolvementLoad01	.004	1	.004	3.277	.077
Time*Song01*Involvement Load01	.000	1	.000	.108	.744
Error	.062	46	.001		

In Chapter 3, four hypotheses concerning the effects of Song and level of involvement with target lexical items on the acquisition of these items were put forward as follows:

Hypothesis 1	All treatment groups will outperform the Control Group on the posttest and delayed posttest.
Hypothesis 2	The high involvement groups will outperform the low involvement groups on the posttest and delayed posttest. **Hypothesis 2A**: The Song/High involvement group will outperform the Song/Low Involvement group on the posttest and delayed posttest. **Hypothesis 2B**: The Lyrics/High Involvement group will outperform the Lyrics/Low involvement group on the post test and delayed posttest.

Hypothesis 3	The treatment groups that are exposed to music will outperform the groups that are only exposed to the lyrics on the posttest and delayed posttest. **Hypothesis 3A**: The Song/High Involvement group will outperform the Lyrics/High Involvement group on the posttest and delayed posttest. **Hypothesis 3B**: The Song/Low Involvement group will outperform the Lyrics/Low Involvement group on the posttest and delayed posttest.
Hypothesis 4	The variable Song leads to greater learning outcomes than the variable Involvement Load.

As such, the general results of the statistical analyses are presented in the next section followed by four subsections, each outlining results related to the testing of Hypotheses 1 through 4.

5.2 General statistical results

Table 16 shows the mean scores for each of the treatment groups on the posttest minus baseline (Time2Diff) and on the delayed posttest minus baseline (Time3Diff). At T2Diff, the group with the lowest score on the posttest was the Lyrics/Low Involvement group with a mean score of 7.60 whereas the Song/Low Involvement group scored higher with a mean of 13.10. The Lyrics/High Involvement group scored slightly better with a mean of 13.15 while the Song/High Involvement group outperformed all groups with a mean of 24.06. At T3Diff, rankings are somewhat different. The lowest scores were still obtained by the Lyrics/Low Involvement group with a mean of 9.60, while the Lyrics/High Involvement group with a mean of 12.92 now scored behind the Song/Low Involvement group with a mean of 16.20. Once again, the Song/High Involvement group scored higher than all other groups with a mean of 23.94.

Table 16: Mean Scores at Time2Diff and Time3Diff

Time	Song	Involvement Load	Mean	Std. Deviation	N
T2Diff	0	0	7.60	9.857	10
	0	1	13.15	7.244	13
	1	0	13.10	8.556	10
	1	1	24.06	11.155	17
T3Diff	0	0	9.60	10.606	10
	0	1	12.92	8.311	13
	1	0	16.20	9.716	10
	1	1	23.94	11.950	17

5.2.1 Results related to Hypothesis 1

All treatment groups will outperform the Control Group on the posttest and delayed posttest.

A Repeated Measures ANOVA was carried out where each of the three testing times (T1, T2, and T3) were included as the within-subjects variable and the Control Group (5C) was the only between subjects variable. This particular ANOVA was carried out in order to determine whether the participants in 5C retained any of the target items over time even without having participated in any of the treatment sessions (see Table 17).

Table 17: ANOVA for Control Group scores at T1, T2, and T3

Source	Type III Sum of Squares	df	Mean Square	F	*p*

Time	.009	2	.005	2.650	.087
Error	.052	30	.002		

Results of this ANOVA showed that, as expected, group 5C did not make any significant gains in terms of lexical retention across the three testing times (p=0.087). In comparing the mean scores of the Control Group at posttest and delayed posttest with those of the four treatment groups, it is clear that the Control Group scored lowest of all groups at both of the testing times and therefore the results support the hypothesis (see Table 18).

Table 18: Mean Scores (Including Control) at Posttest & Delayed Posttest

Group	Mean (T2Diff)	Std. Deviation	Mean (T3Diff)	Std. Deviation
Control	1.50	6.01	3.38	6.20
Lyrics/Low involvement	7.60	9.86	9.60	10.60
Song/Low Involvement	13.10	8.56	16.20	9.72
Lyrics/High Involvement	13.15	7.24	12.92	8.31
Song/High Involvement	24.06	11.16	23.94	11.95

5.2.2 Results related to Hypothesis 2

Hypothesis 2: The high involvement groups will outperform the low involvement groups on the posttest and delayed posttest.

Hypothesis 2A: The Song/High Involvement group will outperform the Song/Low Involvement group on the posttest and delayed posttest.

Hypothesis 2B: The Lyrics/High Involvement group will outperform the Lyrics/Low Involvement group on the post test and delayed posttest.

The ANOVA that was carried out with Involvement Load as a between-subjects variable indicates that Involvement Load does have a significant effect on mean test scores, $F(1, 46)=6.12$, $p=.017$ (see Table 21). In comparing the mean scores of groups that had a high involvement load (18.5) with those that had a low involvement load (11.6), it is clear that those groups with a high involvement load scored higher than those groups that had a low involvement load (see Table 19).

Table 19: Mean Scores for High Involvement Load vs. Low Involvement Load

Involvement Load01	95% Confidence Interval			
	Mean	Std. Error	Lower Bound	Upper Bound
.00	11.6	2.2	7.3	16.0
1.00	18.5	1.8	15.0	22.1

A comparison of the mean scores of treatment groups taking part in either high involvement load activities or low involvement load activities shows that the scores of high involvement groups are higher at T2Diff (13.15 and 24.06 respectively) than the scores of the Low involvement groups (7.60 and 13.10 respectively), and is therefore a result in the hypothesized direction (see Table 16). However, at T3Diff, only one of the high involvement load groups, the Song/High Involvement group, scored higher than the low involvement groups with a score of 23.94, while one low involvement load group, the Song/Low Involvement group outperformed one of the high involvement groups, the Lyrics/High Involvement group, with a

mean score of 16.20 compared with 12.92 (see Table 18). This result is in contradiction with the hypothesis, which projected that at both testing times the high involvement groups would score significantly better than the low involvement groups.

Additionally, it was posited in Hypothesis 2A that the Song/High Involvement group would outperform the Song/Low Involvement group on both the posttest and the delayed posttest. As Table 16 also indicates, this is indeed the result that was obtained: the Song/High Involvement group obtained a mean score of 24.06 on the posttest and a score of 23.94 on the delayed posttest, while the Song/Low Involvement group scored 13.10 and 16.20 on the posttest and delayed posttest respectively.

The final hypothesis dealing with Involvement Load, Hypothesis 2B, posited that the Lyrics/High Involvement group would outperform the Lyrics/Low Involvement group on the posttest and delayed posttest. Mean scores for the Lyrics/High Involvement group were 13.15 and 12.92 on the posttest and delayed posttest respectively while mean scores for the Lyrics/Low Involvement group were 7.60 and 9.60 on the posttest and delayed posttest respectively, indicating that the results do indeed support the hypothesis.

Hypothesis 3: The treatment groups that are exposed to music will outperform the groups that are only exposed to the lyrics on the posttest and delayed posttest.

> **Hypothesis 3A**: The Song/High Involvement group will outperform the Lyrics/High Involvement group on the posttest and delayed posttest.
>
> **Hypothesis 3B**: The Song/Low Involvement group will outperform the Lyrics/Low Involvement group on the posttest and delayed posttest.

5.2.3 Results related to Hypothesis 3

Turning to the between-subjects variable, Song, the ANOVA results showed (see Table 21) that there is a significant main effect of Song on mean scores for target lexical items, $F(1,46)=9.32$, $p=.004$. In comparing the groups that were exposed to music and those groups that were not, the Song groups scored higher (19.3) than the Lyrics groups (10.8), which supports the submitted hypothesis (see Table 20).

Table 20: Mean Scores for Song vs. Non-Song groups

Song01	95% Confidence Interval			
	Mean	Std. Error	Lower Bound	Upper Bound
.00	10.8	.020	6.7	14.9
1.00	19.3	.019	15.5	23.2

The mean scores of the Song and Lyrics groups for the purposes of verifying Hypothesis 2A, which proposes that the Song/High Involvement group will outperform the Lyrics/High Involvement group on the posttest and delayed posttest, indeed shows that results are in the direction of the hypothesis. As summarized in Table 16, at T2Diff, the Song/High Involvement group obtained a mean score of 24.06 while the Lyrics/High Involvement group obtained a mean score of 13.15. At T3Diff, the Song/High Involvement group obtained a mean score of 23.94 while the Lyrics/High Involvement group obtained a lower score of 12.92.

The last hypothesis examining the between-subjects variable Song, Hypothesis 2B, posited that the Song/Low Involvement group would score higher on the posttest and delayed posttest than the Lyrics/Low Involvement group. As Table 16 indicates, on the posttest, the

Song/Low Involvement group did in fact score better (13.10) than the Lyrics/Low Involvement group (7.60). With respect to the delayed posttest, the results are consistent with the hypothesis that the Song/Low Involvement group would score higher (16.20) than the Lyrics/Low Involvement group (9.60).

5.2.4 Results related to Hypothesis 4

The variable Song leads to greater learning outcomes than the variable Involvement Load.

The ANOVA examining the interaction between both variables indicates there is no significant interaction between Song and Involvement Load, F(1,46)=.777, p=.383 (see Table 21). However, each of the variables taken independently from one another do show significance, implying that the effect of Song on lexical acquisition and retention is independent from any effects of Involvement Load and vice versa. In other words, the variables Song and Involvement Load have separate and significant effects on lexical retention irrespective of the presence or absence of the other variable.

Table 21: ANOVA for Song and Involvement Load

Source	Sum of Squares	df	Mean Square	F	*p*	Partial Eta Squared
Song01	17.2	1	17.2	9.319	.004	.168
InvolvementLoad 01	11.3	1	11.3	6.122	.017	. 117
Song01*Involvement Load 01	1.4	1	1.4	.777	.383	.017
Error	85.1	46	1.8			

As summarized in Table 16, the group that was both exposed to music and to high involvement load (1ME) in this study outperformed all other groups on both the posttest and the delayed posttest. At T2, the means for 1ME is 24.1 and at T3 it is 23.9 while the other groups range from a low 7.6 to 13.2 at T2 and 9.6 to 16.2 at T3, below mean scores for the Song/ High Involvement group.

5.3 Summary

The results of the ANOVAs provide several main findings. Firstly, there were no significant differences between groups in terms of lexical knowledge at the outset of the study. Secondly, there was a main effect of Time from pretest to delayed posttest among the treatment groups but there was no main effect of Time between posttest and delayed posttest. This implies there was neither significant improvement nor attrition between T2 and T3 for any of the groups, meaning that four weeks after the posttest, mean test scores do not reveal any significant change in participants' retention of target words. In addition, there was a main effect of Song ($p=0.004$) and a main effect of Involvement Load ($p=0.017$), however there was no interaction between Song and Involvement Load ($p=0.383$) (see Table 21). Mean scores also revealed that the Song/High Involvement group outperformed all other groups at both posttest and delayed posttest, implying that the combination of both variables led to better lexical retention over time, supporting both the hypothesis submitted here and the literature.

6 Discussion

6.1 Introduction

In Chapter 5 the results of the statistical analyses of the test data were presented in response to the specific hypotheses that were being tested in this study. This chapter presents

some conclusions (see Table 22), followed by a discussion of the implications of the findings of this study for the teaching of vocabulary in an Italian programme.

Table 22: Context-Specific Conclusions Based on the Statistical Findings of this Study

Conclusion #1	Song facilitates both the acquisition and short-term retention of target lexical items.
Conclusion #2	Involvement Load can positively affect lexical acquisition.
Conclusion #3	The combination of Involvement Load and Song provides an additive effect in the facilitation of lexical acquisition in beginner learners.
Conclusion #4	Song might lead to better learning outcomes than Involvement Load.

The above conclusions will be discussed individually in light of the study's findings.

6.2 Conclusion #1

Song facilitates both the acquisition and short-term retention of target lexical items.

The main thrust of this study is in understanding the extent to which Song can exercise a significant impact on lexical acquisition. As outlined in Chapter 5, a repeated measures ANOVA with Song as a within-subjects variable revealed that there was a statistically significant main effect of Song such that mean scores on both posttest and delayed posttest indicate participants in groups exposed to the Song *Gli ostacoli del cuore* scored higher than participants in groups only exposed to the lyrics. This result, which aligns itself with Hypothesis 3, suggests that Song can in fact exercise a sizable impact on the acquisition of L2 lexical items and on the short-term retention of those L2 lexical items. The implications of this finding are multi-faceted. Firstly, since all treatment groups listened to the Song's lyrics either read as a poem (without music) or sung with music, the statistical results, which indicate superior acquisition on the part of the music groups, suggest that there does seem to be something inherently unique about the ways in

which music and a text interact as compared with the rhythmic qualities that are intrinsic to the text itself. That is, rhythm in and of itself is not, as Wallace (1994) points out, as powerful as music in promoting retention. That is not to say that rhythm cannot or does not promote lexical retention; however, the results of this study show unequivocally that melody is better than mere rhythm at facilitating the short-term retention of the Italian L2 lexicon. As discussed previously in sections 2.2.4 and 2.3, some possible reasons for the unique role song may play in promoting lexical retention are that it may stimulate the subvocal rehearsal mechanism (also referred to as the Din) in the listener, which in turn allows the lexical items making up the song's lyrics to be repeated over and over again in the listener's mind, thereby consolidating them in the short-term memory and ultimately allowing them to be maintained in the long-term memory store. Indeed, several participants in this study made verbal comments at the start of Session 3 relating to the fact that *Gli ostacoli del cuore* was catchy and remained in their mind for much of the day following their first audition of it. Others were heard humming the tune following both sessions 2 and 3 while still others were heard singing along with the CD while it was being played during Session 3. Some participants from the music groups, already during completion of the posttest, indicated their recognition of and familiarity with the source the target lexical items were taken from in the sentences they provided for category V answers. The sentences that follow, constructed from the target word participants were given (see left hand column below) and where underlined words indicate word strings taken directly from the lyrics of *Gli ostacoli del cuore*, illustrate the familiarity participants in the music groups had already achieved with the Song at posttest:

pacco	*Mi piace molto il <u>pacco di Natale</u>.*	(I like the Christmas package very much.)
ostacolo	*<u>Gli ostacoli del cuore</u>.*	(The obstacles of the heart.)

	*C'è un ostacolo in mia cuore.	(There is an obstacle in my heart.)
principio	*C'è un principio di allegria*.	(There is a principle of joy.)

At delayed posttest, the evidence of this familiarity is still present, further supporting the suggestion that even after a significant period of time following audition of a song, the strong connections that were established between the melody and its accompanying lyrics during audition of the song were maintained:

scartare	*Scarto un pacco*.	(I unwrap a package.)
allegria	*C'è un principio d'allegria*.	(There is a principle of joy.)
principio	*C'è un principio d'ironia*.	(There is a principle of irony.)
pacco	*Apro un pacco di Natale*.	(I open a Christmas package.)

Also of interest is the fact that some participants from the treatment groups exposed to the Song made notations in the margins of their posttest and/or delayed posttest that indicated they recognized the lexical items in those tests had been taken from the Song they had heard and attempts were made to recall the line from which the lexical items had been taken. These informal comments lend further support to the notion Wallace (1994) advanced that "melody provides a framework that indicates how much information must be recalled, where the information has been omitted, as well as the order of segments" (p. 1482). That is, the participants who listened to the Song were aware of the surface structures of the Song sufficiently enough after only four exposures to the Song to be able to recall how particular lexical items fit within the Song's framework, which provides further evidence of the suggestion that a particular text slightly alters a particular melody and that listeners notice and pay attention

to these very subtle characteristics (Crowder, Serafine, & Repp, 1990; Serafine, Crowder, & Repp, 1986).

Another reason song may play a role in L2 lexical retention resides in the simple fact that when melody repeats across verses, it allows the listener to become more familiar with the melody more quickly. As such, better familiarity with a melody implies that this familiarity will also translate into familiarity with the text that is connected to that melody, meaning that lexical acquisition and retention can result from the close relationship that is forged between a text and its accompanying melody. As Wallace (1994) shows in her experiment looking at the differences in lexical retention between trials where participants heard only one sung verse versus trials where participants heard a number of verses sung to the same melody, lexical retention was found to be greater in those trials where a melody was repeated across verses. The same result was obtained when Wallace compared trials where a number of verses were sung to the same melody and trials where verses were each sung to a different melody: Recall was greater for those trials where the melody was identical across verses. Wallace suggests these results are due to the fact that when a melody is heard only once or when a different melody is presented across verses, it demands more of the listener in terms of memory processes. That is, in addition to processing the textual material, the listener is also required to process unfamiliar and non-recurring melodies and therefore, this additional information can eliminate the facilitative effect of music. On the other hand, when a melody repeats across verses, its familiarity to the listener creates a facilitative effect in terms of lexical retention because it does not distract the listener from the text, but instead repeatedly cues the listener to the relationship between the text and the melody, thereby promoting retention of the words that are linked to specific segments of the melody. With respect to the Song utilised in this experiment, *Gli ostacoli del cuore*, the melody repeats a total of 5 times across verses in addition to the refrain, which repeats a total of 4 times

over the course of the Song. The results of this experiment, which show that lexical acquisition and retention among groups exposed to the melody is higher than groups not exposed to the melody, support the hypothesis that the repetitive nature of a melody would seem to aid in facilitating not only lexical recall but also the acquisition of lexical items.

6.3 Conclusion #2

Involvement Load can positively affect lexical acquisition.

Hypothesis 1 predicted that participants in groups performing high involvement load activities would perform better on the posttest and delayed posttest than participants taking part in low involvement load activities. As outlined in Chapter 5, the ANOVA that was carried out using Involvement Load as a between-subjects variable shows that the treatment groups that participated in high involvement load activities performed better than those groups that participated in low involvement load tasks (see Table 19). This significant statistical outcome implies that, just as the literature on involvement load and its effect on lexical acquisition suggests, the greater the extent to which learners interact with lexical items, the more apt they are to acquire those items (Hulstijn & Laufer, 2001; Laufer & Hulstijn, 2001). When tasks require L2 learners to maintain high levels of the factors Need, Search, and Evaluation in carrying out activities, results of this study point to improved levels of lexical acquisition compared with groups that interact on very low levels (if at all) with target lexical items. In addition, the ANOVA that was carried out using Time as a within-subjects variable (see Table 15) showed that there was no main effect of Time between the posttest and the delayed posttest, implying that there was no significant attrition across high-involvement groups in terms of lexical retention between the two posttests. This result supports the conclusion that high involvement load aids in not only lexical acquisition in the short-term, but also in the retention of this lexical

knowledge. The results of this study, which show that lexical items were indeed well-retained at the time of the delayed posttest, provides some convincing evidence for Baddeley, Papagno, and Vallar's (1988) conclusion that in order for lexical information to be stored in the long-term, its phonological characteristics must first be processed and maintained in Working Memory (i.e. the short-term store). Thus, involvement load could in fact be an excellent facilitator of phonological rehearsal which, as discussed in section 3.8, the literature suggests leads to long-term retention and therefore to improved levels of vocabulary knowledge.

6.4 Conclusion #3

The combination of Involvement Load and Song can provide an additive effect in the facilitation of lexical acquisition in beginner learners of Italian.

As outlined in Chapter 5, the results of the ANOVA using both Involvement Load and Song as between-subjects variables showed that there is a significant main effect of Involvement Load, $F(1, 46)=6.12$, $p=.017$, in addition to a main effect of Song $F(1,46)=9.32$, $p=.004$, suggesting that each variable, independently of the other, yields a facilitating effect on lexical acquisition and retention. However, there was no significant interaction between Song and Involvement Load, $F(1,46)=.777$, $p=.383$. This implies that Song and Involvement Load are variables which, when taken together, may not influence one another. That is to say that neither Song nor Involvement Load can be said to have an influence on one another or, put more simply, the presence of Song has no bearing on Involvement Load and vice versa. However, despite the lack of a significant interaction between these variables, mean scores for all treatment groups at both T2Diff and T3Diff show that the Song/High Involvement group performed better than all other groups with scores of 24.06 and 23.94 respectively (out of a maximum possible 100), suggesting, therefore, that the combination of the variables Song and Involvement Load provides

an additive effect on lexical retention. So, while the variables do not seem to influence *each other* to a statistically significant degree, since each variable appears to facilitate lexical retention independently of the other variable and since the presence of *both* variables leads to the highest mean scores among all treatment groups, this suggests that the two variables together provide additional facilitation of lexical retention. Several reasons for this could be plausible. Firstly, as was pointed out in Section 2.3, listening to a song with a melody that repeats across verses and which is relatively simple in terms of contour implies that the listener will more readily create connections between the text and the music corresponding to the text. These connections take the form of information the listener abstracts such as the length of the text lines, the number of syllables in a line, and rhythm and beat patterns. Wallace and Rubin (1991) argue that because of these connections, elaboration of the text is heightened and, therefore, memory for the text is strengthened. Additionally, the text-music connections increase memory access because they act as a cue to memory (Wallace, 1994). In other words, melody seems to allow the human brain to better maintain textual components and, as pointed out in Section 3.8, maintenance is an important factor in the storage of information within human memory. The same could be said for involvement load. A high involvement load, it has been suggested, facilitates the creation of greater associations between old and new information (for example, comparing a new meaning of a lexical item to an old meaning). In other words, the higher the involvement load the more elaborate the information processing required, which in turn implies the utilization of greater cognitive processes, all of which suggests memory for the information is strengthened. Laufer and Hulstijn's (2001) Involvement Load Hypothesis is constructed based (in part) on cognitive processing literature which suggests, as Wallace has proposed for music, that the richer the associations that are established between the various types/aspects of information, the better the chances the information will be maintained in the memory. Therefore, as the results of this study

suggest, both song and high involvement load tasks may allow learners to increase the connections they abstract from information and therefore these strengthened connections may also promote long-term retention in the memory.

Another possible explanation for the better performance of the Song/High Involvement group over the other treatment groups in this study is that both melody and involvement load may improve the extent to which learners notice target lexical items. As outlined in Section 3.9, the concept of noticing can be defined as a level of awareness that determines whether the contents of a learner's attention are consciously registered. According to some SLA scholars, the concepts of noticing and attention are necessary in order for input to be converted into intake (cf. Schmidt, 1990, 1994; Van Patten, 1984). As Schmidt (2001) points out, stimuli that are not the focus of a learner's attention remain in short-term memory for a few seconds and are not then transferred to the long-term memory store because they are not maintained in any way in short-term memory. Therefore, in order for information to be stored in memory on a long-term basis learners must pay attention to and notice the information they receive. While attention and noticing are cognitive constructs, the literature on these concepts also suggests that learners are able to selectively determine, usually based on the demands of the tasks they are carrying out, which features of language to attend to and notice. As such, it is possible for language educators to manipulate activities so that learners' attention is directed toward certain features of the language rather than others, features which may otherwise go unnoticed by the learner. Song, as the results of this study show, may be one way of targeting learners' attention to lexical items. Because a melody increases the amount of information that a listener must process over and above the lexical items found in the lyrics, this added information, as mentioned previously, could be responsible for leading the listener to create greater connections between the melody and the text. In other words, what music does is to accentuate or make more salient, the features

of the text by linking them strongly to features of a melody.[25] Because of this text-melody connection, it is possible that noticing of the text is heightened as a result and then further strengthened through rehearsal (either subvocal or vocal), thus allowing the text and the individual lexical items of which the text is made, to be maintained in the short-term and then retained in the long-term. The same could be said for task-based involvement load. Requiring learners to carry out tasks that focus on and use certain lexical items in a text undoubtedly renders those lexical items more salient to the learner than others and therefore increases the chances that those lexical items will be attended to and noticed by the learner. The result of this increased attention is, as the results of this experiment seem to indicate, that learners retain those lexical items both in the short-term.

6.5 Conclusion #4

It is not completely clear that Song leads to better learning outcomes than Involvement Load.

The ANOVA that was carried out in which Song and Involvement Load were between subjects variables yielded no significant interaction between the variables Song and Involvement Load, $F(1,46)=.777$, $p=.383$ (see Table 21) and therefore, it is not possible to conclude, based on the analyses performed, whether Song or Involvement Load has the greater effect on learning outcomes. Despite the lack of significance, however, the Partial Eta Squared statistics do show that Song has a slightly stronger effect size (.168) than Involvement Load (.117). While both numbers are relatively small, they do provide the suggestion that Song may exert a slightly stronger effect than Involvement Load on lexical learning. Mean scores at delayed posttest

[25] It should be underlined, however, that as Wallace (1994) showed in her experiments examining the effects on recall of exposing learners to one verse of a song and in another case to three verses each sung to a different melody, attention to or increased interest generated by music is not sufficient for music to facilitate retention, otherwise the outcome of these aforementioned experiments would have yielded improved learning and improved recall, which they did not. Rather, she underlines that it is the entire combination of cues and connections that are provided by music which are required in order for retention to be facilitated.

support this suggestion since both Song groups obtained higher scores than all other treatment groups, even when Involvement Load was kept constant. This finding is not surprising since, as was argued previously, melody may be responsible for making target lexical items more salient to learners and therefore better draw learners to attend to and notice those lexical items. However, further research comparing the two variables and a larger sample size are required in order to make this determination more conclusive.

6.6 Pedagogical implications

The application of research in SLA to the L2 classroom is one of the driving forces behind this study and indeed, the implications of the present study for L2 language pedagogy are obvious and numerous. Better understanding how L2 learners acquire their L2 lexicon should, by extension, influence how language educators approach the task of lexical instruction since, as has been addressed on numerous occasions in this study and elsewhere (see Carter & McCarthy, 1988; Laufer, 1990c; Nation, 1990; Paribakht & Wesche, 1997), educators can and do in fact facilitate learners' lexical acquisition through their classroom practices. However, despite the increased focus of research in SLA on the L2 lexicon over the past two decades or so, language pedagogical materials and classroom practices, and in particular those created for the L2 Italian classroom, continue to reflect a disconnect between what research has uncovered about the processes involved in lexical acquisition (both cognitive and affective) and how classroom-based activities can facilitate that process or not. Despite the growing number of Italian language textbooks claiming to espouse a 'communicative' approach to language teaching and learning, this claim can, in many cases, only apply to the grammatical components broached in these textbooks. Vocabulary lists taken completely or almost completely out of context continue to be the main source of vocabulary presentation while short dialogues purporting to represent realistic

or ‘natural’ conversational exchanges are often the only sources of lexicon in context learners are exposed to. Disjointed and pattern practice activities that are often not relevant to learners’ own experience often do not bear any relationship to the lexical theme(s) of a particular chapter and therefore, do little to allow learners to truly experience the language they are learning and provide limited access to contexts that could realistically be encountered in conversation with native speakers of the L2. While a number of current Italian L2 introductory pedagogical materials have attempted to improve upon the paucity of research-based didactic materials to some degree, there remains a notable lack of progress in terms of how the lexicon is considered within those materials.

This disconnect between theory and practice with respect to the teaching of the lexicon is puzzling since, as outlined in Chapter 2, both theoretical arguments and empirical evidence have suggested for some time that not only is the lexicon one of the main obstacles to language acquisition, the vast majority of L2 vocabulary acquisition, especially when it comes to depth, does not result from memorized word lists but rather is the consequence of frequent exposure to lexical items in a variety of contexts. This is most commonly achieved through the implementation of reading and reading-related tasks, as well as through oral or mixed sources of language input (Brown, Sagers, & LaPorte, 1999; Joe, 1995; Wode, 1999; Paribakht & Wesche, 1999). In order to become fluent speakers of an L2, learners must acquire several thousands of words. As such, it is impossible to expect that this acquisition will come from a limited number of vocabulary lists and activities through which the learner may encounter lexical items a limited number of times. In addition to the frequency with which a learner is exposed to lexical items, which has been shown to positively impact lexical acquisition, the level to which a learner is engaged with the lexicon is also, as outlined in the current study, an important factor in the acquisition process. The greater the extent to which cognitive processing and phonological

rehearsal are carried out on specific lexical items, the more likely those items are to be maintained in the short-term and then retained in the long-term, and therefore, acquired. The empirical findings of the present study support the theoretical constructs of the Involvement Load Hypothesis in showing that in fact, over the short-term, increased level of involvement with lexical items does indeed have a positive impact on retention as evidenced by the superior mean scores of treatment groups completing high involvement load tasks over groups completing low involvement tasks. The implication of this finding for classroom practice is clear: Greater emphasis needs to be placed on learners' engagement with the lexicon. That is, mere exposure and increased frequency of exposure to the lexicon, even in context, does not suffice to facilitate the retention of the lexicon in beginner learners. Rather, the *combination* of exposure, context, level of involvement, and rehearsal provide ideal conditions in which lexical acquisition can flourish. For this reason, language educators are encouraged to abandon the outdated and ineffective practice of presenting vocabulary through word lists and to adopt a much more thematically-driven and contextually-based methodology of vocabulary instruction, which makes use of tasks that are designed specifically with the Involvement Load Hypothesis in mind.

In addition to the support this study offers for the Involvement Load Hypothesis, an argument can be made both on theoretical and on empirical grounds for the re-examination of the role of song in the facilitation of lexical acquisition in the introductory L2 classroom and more specifically in the introductory Italian L2 classroom. As outlined in Section 2.2, the implementation of song in the L2 classroom continues to be regarded as light-hearted, trivial, and only minimally relevant to the language learning process. While there does exist the recognition that popular song can provide appropriate cultural context to the L2 classroom (cf. Bruno, 1989; Diadori, 1997; Gatti-Taylor, 1980; Ghezzi, 2004; Nuessel & Cicogna, 1991) the influence of song on actual language development in L2 learners is generally poorly understood and/or

unexplored by current research, likely due to the unfavourable association song has maintained with entertainment, amusement, and frivolity. While in the L2 classroom itself song does seem to find favour as a learning tool both by learners and educators alike (see e.g. Baroni, 1996; Bruno, 1989; Costamagna, 1994; Dalmonte, 1994; Diadori, 1997; Nuessel & Cicogna, 1991), it continues to remain generally unexplored as a vocabulary learning tool and is often underutilised, even when it is seen favourably by educators of adult L2 learners, because of its widespread rejection as a valuable language teaching tool. Rather, the results of the present study show convincingly that song can do much more for the L2 Italian learner than simply providing cultural context. The statistically significant effect of song on vocabulary retention obtained in the current study supports the claim that song can facilitate the acquisition and short-term retention of lexical items. And, as discussed in section 6.3, the implication of this finding is that song promotes the rehearsal of those lexical items, a necessary ingredient in the commitment of lexical items to memory. Song, while also promoting cultural competence in the L2 learner, provides a context through which learners can experience lexical items being used in a realistic way as well as a relevant and meaningful context for those language learners by virtue of the issues that are typically broached in popular song. In the literature on SLA, the importance of relevance to L2 learners has been well documented in terms of its ability to motivate learners and, as was also outlined here in Chapter 1 and throughout recent SLA research, motivation is one of the key measures of success in language acquisition (cf. Crookes & Schmidt, 1991; Dörnyei, 2008; Gardner, 1985; Gass & Selinker, 2008).

Finally, oral input has also been shown to have a positive effect on L2 learners' language acquisition. Brown & Sagers (1999) examined the vocabulary acquisition of EFL learners through oral and written dialogues and found that not only did learners acquire words through oral input, but in fact all learners appeared to have learned more words from oral input than

through written input. While research on the effects of oral input on lexical acquisition remains scarce, findings such as those provided by the Brown & Sagers (1999) study highlight the importance of providing L2 learners with oral input in the language classroom. Song is an obvious source of oral input which not only exposes learners to the phonological characteristics of lexical items but also, through the promotion of rehearsal, provides the ultimate tool for consolidating the acquisition of phonology.

While SLA research on lexical acquisition rejects the notion that all vocabulary can and should be taught explicitly, there is room in the L2 classroom for the language educator to lead learners toward lexical acquisition by rendering lexical items more salient to learners. As argued in the present study, Song is an ideal medium through which to achieve this and its implementation as a lexical teaching tool supports the research that has shown language learners require guidance and tools provided by their language educators that can help to make the lexicon more salient, more contextually-driven, and more relevant to their reality. However, due to the realities of classroom teaching, it would be naïve to suggest that language educators could increase their use of song in the L2 classroom without the assistance of appropriate pedagogical materials developed specifically for this purpose. Choosing songs that utilise simple, pleasant, and repetitive melodies and that contain topics that are of interest to a particular group of learners, in addition to developing appropriate language learning activities based on these songs, is undoubtedly a time-consuming undertaking. Unfortunately, with respect to the Italian L2 classroom (and with most L2 pedagogical materials in general), very few materials (and updated ones in particular) exist that have been conceived for the purpose of engaging Italian L2 learners with the Italian language and culture via Italian popular music. A perusal of some of the most popular and current introductory Italian language textbooks reveals an unsurprising finding: With a few notable exceptions (discussed in greater detail below), song is not a prominent or

systematic feature in any of them. While some contain one or two sets of fill-in-the-blank song lyrics in an entire tome, most of the song-based lessons do not provide the types of activities that lend themselves to the kind of lexical, grammatical, and cultural development that is essential to L2 learning and which could easily be achieved by focusing on song. Interestingly, however, in the last decade or so, a few adult-focused song-based Italian language materials have been published in Italy and in North America, suggesting that the recognition of song as a viable language teaching and learning tool in the adult L2 classroom may be gaining ground. One of the first such resources is Costamagna's (1990) *Cantare l'italiano,* which includes both a textbook containing the lyrics of 24 Italian popular songs and an audiocassette. The textbook is organized in chronological order beginning with Domenico Modugno's famous 1958 *Nel blu dipinto di blu* (also known as *Volare*) and ending with Zucchero Fornaciari's 1987 *Non ti sopporto più*. The volume is further subdivided along three decades (1960s, 1970s, 1980s) and each section is preceded by an introduction outlining the most salient socio-historical characteristics of the particular decade that influenced the music of that decade. Following the presentation of the lyrics of each song are a number of in-class comprehension activities as well as grammatical and lexical activities. Danesi & DeSousa's *Opera Italian* (1998, 2004) offers a unique approach to teaching the Italian language by presenting the language through the medium of opera. Some of opera's most well-known arias are presented in the text, along with pre- and post-reading/listening activities, glosses of key lexical items, and grammatical exercises related to features of the texts. A more recent publication is Naddeo and Trama's (2000) *Canta che ti passa,* which consists of a workbook and accompanying CD of 15 Italian popular songs. The workbook is organized according to increasing level of difficulty in terms of the linguistic content of each song and for each song, a ranking of level of difficulty (*elementare*, *intermedio*, *avanzato*) with respect to language is offered, along with indications as to the grammatical topics

that are presented in the song, what the communicative themes are, the cultural components, and finally, a classification of the song in terms of genre. A short biography of the singer/singer-songwriter and note on the song itself are presented as an introduction to each song and this is followed by pre-listening, listening, and post-listening activities in a variety of formats. The workbook is rich in visual stimuli and also contains a mix of both traditional grammar-based tasks and communicative activities. In 2006, Mezzadri published *Cantagramma*, another workbook with accompanying CD, whose focus is on the teaching of Italian grammar via song. Organized according to particular grammatical features, the volume offers learners the opportunity to listen to songs containing the target feature, to then complete a number of communicative activities, then to grammatical explanations, and finally to more communicative activities that emphasize the usage of the grammatical feature in question. Lastly, as recently as 2010, Costamagna, Marasco, & Santeusanio published *L'italiano con le canzoni.* This volume provides learners with ten Italian popular songs dating from the 1990s to 2005 that are organized by level of difficulty. A biography of each singer-songwriter is provided at the beginning of each unit followed by pre-listening activities. A listening phase is then followed by communicative activities related to comprehension of the song lyrics and lexical development. Finally, additional reading activities based on topics related to the song are provided for further development. These materials testify to the versatility of song as a didactic tool, a tool that can bring together and develop lexical, grammatical, phonological, and cultural competence in Italian. However, they also highlight the need for the development of more elastic materials. Song is an ideal medium through which learners can become communicatively competent and therefore more easily-accessible and readily-updated materials of the types described here need to be developed so that language educators can increase the presence of song in their classrooms. That is, in order for the implementation of song in the L2 classroom to be its most effective in terms of language

acquisition, it must be relevant to learners and therefore, outdated music and lyrics that may not appeal to the vast majority of learners and is undesirable. As such, developers of language teaching materials should take advantage of the online medium, which is amenable to the kind of updating that is required of song-based language materials, so as to allow language educators easy access to effective, up-to-date, and readily usable tools.

6.7 Implications for receptive and productive lexical acquisition

One of the most important aspects of lexical acquisition that this study has attempted to clarify is that the process of lexical acquisition is just that: a process. This means that there are varying stages in that process and at each of those stages a different type of knowledge is acquired. As discussed at length in section 3.1, the receptive-productive dichotomy in lexical acquisition helps to distinguish the varying stages of lexical acquisition. As the present study has attempted to show through quantitative analysis, any improvement in vocabulary knowledge on the part of learners implies an increase in score on the Vocabulary Knowledge Scale from a 1 (denoting the item is unfamiliar) through to a 5 (denoting the item can be used productively in context). In some cases, a learner's acquisition may be reflective of the receptive type where a previously unknown lexical item is now recognized and the meaning of that item is becoming more familiar. In other cases, the learner may move beyond the receptive type of acquisition to the productive type, where not only is a lexical item recognized, but the learner is able to use it in an original sentence created by the learner him/herself. For instance, some examples of sentences participants provided in this study on the posttest, using a specific target lexical item from the lyrics of the Song (underlined), show the extent to which the treatment activities were effective in leading the participants to acquisition of the target items:

1. *Tu non sai il mio <u>pensiero</u>. (You don't know my thought.)

2. Posso sentire la musica.	(I can hear the music.)
3. Posso buttare la robba [sic].	(I can throw away the stuff.)
4. Io naufrago nel mare.	(I drown in the sea.)
5. Io prendo un tè per te volentieri.	(I gladly order a tea for you.)
6. I genti [sic] possono sentire la musica per trovare la magia nella canzone.	(People can listen to music in order to find the magic in the song.)
7. Io scarto il mio regalo.	(I unwrap my gift.)
8. Ieri ho sentito del concerto di Britney e io volgio [sic] andare.	(Yesterday, I heard about the Britney concert and I want to go.)
9. Io voglio coccolare il bambino.	(I want to cuddle the child.)

In each of the above examples, the target lexical items were utilised correctly both in terms of grammar and syntax as well as in the correct pragmatic sense, implying that for some participants the acquisition of some of the target lexical items was noticeably advanced. In the case of Examples 2., 6., and 8., the target item *sentire* is polysemous. Participants had, prior to the study, learned one of the meanings of *sentire*, which is 'to feel', however, in the Song *Gli ostacoli del cuore*, another meaning of *sentire* is provided, and that is 'to hear'. As the above examples show, some participants were able not only to recognize this new meaning of *sentire*, but they were in fact able to productively use this new meaning in an original sentence.

In addition to the above examples, it is also of note that a significant number of participants who scored a 1 for particular target words on the pretest, and that is that the word was unfamiliar to them, scored 2 or higher on the posttest. Some of the greatest improvements are outlined below in Table 23. As the table indicates, significant improvement was made at the recognition (receptive) level with respect to many of the target lexical items that were previously unfamiliar to the participants prior to the treatments. That is, participants for whom lexical items

were totally unfamiliar prior to the study were able to at least recognize the target items following the treatment sessions.

Table 23: Improvements in Scores from Pretest to Posttest

Target lexical item	N scoring 1 at pretest and at posttest	N scoring 1 at pretest and >1 at posttest	% scoring 1 at pretest & posttest	% scoring >1 at posttest
magia	13	24	35.1	64.9
pacco	13	23	36.1	63.9
ostacolo	15	38	28.3	71.7
cuore	4	20	16.7	83.3
naufragare	24	33	42.1	57.9
attaccare	15	20	42.9	57.1
coccolare	14	35	28.6	71.4

In addition, some of the target lexical items included in this study showed significant improvement in terms of type of acquisition among treatment groups. In comparing the number of respondents obtaining a score of 1, 2 or 3 (receptive knowledge) at pretest for a particular target word with the number of respondents increasing their score to a 4 or 5 (productive knowledge) at posttest for the same target word, a picture emerges of the extent to which the treatment activities of this study facilitated not only receptive knowledge of the words but also productive knowledge. For instance, 46% of participants improved their acquisition of the word *magia* from receptive knowledge of the word at pretest to productive knowledge of the word at

posttest. Similarly, 32% of participants in treatment groups improved from receptive knowledge of *pacco* to productive knowledge of the word and 38% of participants' knowledge underwent the same improvement with respect to *ostacolo*. The word *cuore* also yielded a significant change in participants' type of knowledge with 45% of participants improving from receptive knowledge of the word to productive knowledge of it. One possible reason for greater improvement in knowledge type for some target words over others is that the frequency of occurrence of some of the words is higher in the lyrics than others. For instance, participants would have encountered *ostacolo* and *cuore* multiple times in one listening session since these two particular words repeat multiple times within the Song whereas, for instance, *dondolare* is only encountered once. Another possible explanation is that some of the target lexical items may be cognates for some participants with knowledge of another language. However, as discussed in section 4.3, the impossibility of verifying the cognate status of all target lexical items in this study for each of the myriad language backgrounds present in this study makes it an impossible task to verify this suggestion. The intralexical characteristics of some of the lexical items (i.e. pronounceability, word length) could also have been responsible for the greater ease with which some lexical items were acquired over others. Perhaps *cuore* is easier to pronounce than *naufragare* and perhaps because it is shorter it is also easier to recall. Additionally, some of the lexical items may be easier to conceptualize than others. The concept of concreteness with respect to the imageability of some L2 lexical items, as discussed in section 3.2.6, suggests the possibility that some of the items may be easier for participants to link to a pictorial image than others and also that participants' language background and therefore the conceptual organization of their L1 may also influence the ease with which some lexical items are recalled over others. A final submission is that some of the lexical items may have been more salient to participants than others thanks either to the surface characteristics of the melody/lyrics themselves. That is,

perhaps for those participants exposed to the lyrics only, the rhythmic quality of the speech drew their attention to certain words, causing them to notice those words better than others. Additionally, for those participants exposed to the lyrics in addition to the melody, perhaps the musical phrase lended itself to the salience of certain lyrics over others. Nevertheless, what these results show with considerable certainty is that both Involvement Load and Song can not only facilitate the retention of lexical items and improve knowledge type, but also that both variables prevent the attrition of lexical knowledge from taking place over time. Both variables, and music in particular, as argued in this study, are able to draw learners' attention to specific lexical items, thereby allowing learners to notice those items in future encounters. Involvement load and music may both act as forms of input enhancement and facilitate the rehearsal that is fundamental to retention and which, by corollary, serves to lessen the likelihood of attrition over time.

6.8 Learning of specific target items

This study has illustrated through the mean scores of the treatment groups that learning of the target lexical items took place. However, as section 6.7 highlights, certain target lexical items in this study were learned better than others. This section explores those items and suggests reasons as to why participants may have had success in acquiring them.

With respect to the words *magia* (magic) and *pacco* (package, parcel), it is very likely that participants recognized them as being cognates with English. As Kroll & Stewart's Revised Hierarchical Model (1994) has suggested, learners who are at the very early stages of L2 acquisition rely very heavily on their L1 in both translation and concept mediation. Since the number of L1 speakers of English among participants in the study is high, the conclusion that *magia* and *pacco* were learned and retained well because of their cognate status is plausible.

The word *naufragare* is only encountered once in *Gli ostacoli del cuore* and is not a cognate with English. It is also the longest target word in the list. For these reasons, the fact it was learned to such an extent is somewhat of a surprising finding. A possible explanation for this could be that *naufragare* is a cognate with other Romance language verbs (*naufrager* – French; *naufragar* – Spanish; *naufragar* – Portuguese) and nouns (*naufrage* – French; *naufragio* – Spanish; *naufrágio* – Portuguese; *naufragiu* – Romanian), considering the relatively large number of participants in this study with L2 fluency in a Romance language.

The learning success for the word a*ttaccare* is another surprising finding because *attaccare* is a polyseme and, as outlined in section 3.2.4, polysemous words tend to be more problematic for L2 learners than words with only one meaning. One of the meanings of *attaccare* is 'to attack' which makes it an obvious cognate with English. However, the other meaning of *attaccare* is 'to attach', which is likely not as readily perceived as a cognate with English because of the difference in phonemes between the Italian and English forms. Just like *naufragare*, *attaccare* is only encountered once in *Gli ostacoli del cuore* and this low frequency of exposure combined with the fact it is a polysemous word would lead to the expectation that it not be as readily learned as some of the other target lexical items in this study. The fact it was indeed learned well suggests that context in addition to high involvement load activities may have played a strong role in its acquisition. Having to decipher its meaning through negotiation with others, participants not only increased their frequency of exposure to *attaccare* but also likely increased their cognitive processing of the word, leading to better acquisition and retention of it.

Coccolare (to cuddle) is another word that participants were surprisingly successful in acquiring. Just like *naufragare* and *attaccare, coccolare* is a low frequency word in Italian and

with respect to its frequency of occurrence in *Gli ostacoli del cuore*, is equally low: it occurs a single time in the Song. However, *coccolare* could have been salient to the participants because of the repetition of the [k] sound, making it stand out to a certain degree. Another explanation could also be that both *coccolare* and *cuddle* share the same initial [k] sound, making it easier for the learners to make a connection between the Italian and its English translation.

The word *ostacolo* was one of the best learned target words in the set and several explanations for this are possible. Firstly, unlike those target words discussed previously, *ostacolo* in its plural form (*ostacoli*) is encountered several times over the course of *Gli ostacoli del cuore* for a total of three times. Because of this repetition within the Song and since participants were exposed to the Song/poem a total of four times, this entails they were exposed to the word *ostacoli* a total of 12 times throughout the experiment, thereby increasing the chances participants noticed it and by consequence acquired it. Another reason participants acquired *ostacolo* so well is likely the fact that it is a cognate with English 'obstacle', making it easy for learners to map the English semantic and graphemic forms onto the Italian.

Finally, the target word that was acquired best out of all target words in this study is *cuore* (heart) with 83.3% of participants scoring greater than 1 at posttest. *Cuore* is a cognate with several Romance languages (*coeur* – French; *corazon* – Spanish; *coração* – Portuguese) and since a fairly robust number of participants had an advanced level of proficiency in these languages, it is highly plausible that the cognate status of *cuore* rendered it fairly easy to acquire. In addition to its cognate status, *cuore* is, like *ostacolo*, also encountered three times over the course of *Gli ostacoli del cuore*, meaning participants were exposed to it 12 times over the course of the experiment. This frequency of exposure, combined with its cognate status, likely contributed to the fact it was learned so well.

6.9 The influence of L1 & L2 on target word acquisition

As described in detail in section 3.3.1, the role of the mother tongue and of L2 on the acquisition of other languages is an important factor in lexical acquisition. Language distance (both real and perceived), cognate status, and concept mediation between L1, L2, and the target language can all have an impact on learners' ability to acquire the target language's lexicon. With respect to the present study, the multilingual nature of the sample needs to be addressed in light of the fact that the variables Song and Involvement Load are being investigated for their impact on lexical acquisition. In order to isolate these two variables, it is imperative that other potential variables, namely L1 and L2, be examined in order to determine the extent to which they may have played a role in learners' acquisition and retention of target lexical items.

For this reason, a Repeated Measures ANOVA was conducted in which L1 and L2 were between-subjects variables and T2Diff & T3Diff were within-subjects variables. As Table 24 outlines, Time does not interact with participants' L1 or L2 as significance levels are well above 0.05.

Table 24: ANOVA for Effects of Time on L1 & L2

Source	Type III Sum of Squares	df	Mean Square	F	*p*
Time	.003	1	.003	1.932	.170
Time*L1	.000	3	.000	.068	.977
Time*L2	.002	3	.001	.416	.742
Time*L1*L2	.001	3	.000	.221	.881

In examining the interaction of L1 and L2 on participants' test scores, Table 25 indicates that L1 did not have any measurable effect on participants' scores. However, there was a marginally significant interaction between L2 & test scores at the p=0.050 level.

Table 25: ANOVA for Effects of L1 & L2 on Target Word Mean Scores

Source	Type III Sum of Squares	df	Mean Square	F	*p*
Intercept	.570	1	.570	21.833	.000
L1	.050	3	.017	.644	.590
L2	.217	3	.072	2.774	.050
L1*L2	.002	3	.001	.022	.996
Error	1.463	56	.026		

6.9.1 Interpretation of the results

The fact that there was no overall effect of Time on participants' scores indicates that neither at posttest nor at delayed posttest did L1 or L2 play a significant role in participants' scores. That is, Time did not have any significant effect on the extent to which participants' language background affected their scores. Given what has been discussed previously in terms of the role of language background on lexical acquisition, this result suggests that the passage of time did not play a role, to any significant extent, in causing participants' L1 or L2 to assist in their acquisition of the target lexical items of this study.

With respect to the effects of L1 and L2 on participants' test scores and to the interaction between L1 and L2, Table 25 indicates that participants' L1 did not have any significant effect

on target item acquisition and retention nor did the interaction between participants' L1 & L2. This result suggests that participants' L1 was not a significant factor in their acquisition and retention of target lexical items. It also suggests that the combination of participants' L1 and L2 did not contribute to their acquisition and/or retention of the target items. However, results do show marginal significance with respect to the effect of L2 on acquisition and retention of the target items. As Table 26 highlights, those participants with no knowledge of an L2 scored better than those participants who did have knowledge of an L2.

Table 26: Mean Scores for Target Words Based on L2

L2	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
None	31.3	8.1	15.1	47.4
English	13.7	2.3	9.1	18.3
Romance	6.6	4.6	-2.6	15.7
All others	7.7	5.2	-2.7	18.2

This result is somewhat surprising in light of the fact that based on the literature on L2 lexical acquisition, those participants with knowledge of a Romance language in particular would have been expected to rely to some degree on their L2 knowledge in their acquisition of Italian lexical items. Given the fact that, as outlined in section 6.8, there are several cognates among the target lexical items with other Romance languages (French, Spanish, Portuguese), the expectation was, therefore, that target item acquisition and retention would likely have been facilitated for those participants with knowledge of a Romance language. In fact, those participants with background in a Romance language scored the lowest out of all L2 groups!

This suggests that L2, and more specifically those L2s that are closely related linguistically to the target language, may in fact cause learners to mistrust the ability of their L2 to assist them in the acquisition of an additional language and lead them to doubt the extent to which cognates between the two languages might exist. Alternatively, perhaps learners did in fact lean on their L2 for assistance in acquiring the target items but made incorrect guesses as to the meaning of the target items based on L2 words that are false cognates. It would be fruitful to pursue this aspect of the lexical acquisition process by conducting think-aloud protocols whereby participants could further explain their thought processes while completing lexical acquisition tests. Such protocols would likely shed further light on the extent to which L2 plays a role in the lexical acquisition of other languages.

7 Conclusion

This study presents a unique perspective in the study of lexical acquisition in that it examines the role of two poorly understood factors in the acquisition and retention of lexical

items: song and involvement load. In addition, the study examines lexical acquisition in Italian as a second language, a language on which there has been much less research in North America than other Romance languages like Spanish and French. The theoretical constructs on which this project is based, along with the results of statistical analysis conducted on the data collected from four experimental groups, provide convincing evidence that both song and involvement load play a facilitative role in the acquisition and short-term retention of the Italian lexicon. As Chapter 5 describes, participants in the study who were exposed to an Italian popular Song acquired and retained certain target lexical items better than those participants who were only exposed to the Song's lyrics in the absence of music. Additionally, participants who executed activities deemed high in involvement load outperformed those participants who took part in low involvement load activities on a posttest and delayed posttest. Statistical analysis also revealed that Song and Involvement Load play separate but significant roles in acquisition and that these roles are additive in that both factors together produce significant positive effects on acquisition and retention. As such, the results of this study provide encouraging evidence that lexical acquisition must be viewed as a process that can benefit from specific kinds of interaction with input. In the case of Song, this project offers compelling support for a re-evaluation of its role in the second language classroom. That is, song should not simply be deemed a form of *détente* but rather should, based on the findings of this study, be reconsidered as an efficient and effective classroom technique for teaching adult learners new L2 lexical items. In a similar way, the construct of involvement load deserves serious consideration as a lexical learning and teaching tool. Participants in this project who interacted in an intensive way with target lexical items both acquired and retained those lexical items better than participants who interacted with those items on very low levels, suggesting that vocabulary learning and instruction requires engagement with the lexicon at the level of searching for meaning as well as exposure to and use in various

contexts. In summary, this project provides support for the plethora of studies in second language vocabulary acquisition that indicate vocabulary learning is a complex process that can benefit from specific strategies from both the learner and educator perspectives; it offers a unique approach to rendering that process more effective, efficient, and enjoyable.

In the following section, some of the factors that could have impacted the results of this study are described and in the final section, aspects of this study that should be considered in future research are suggested.

7.1 Limitations of the study

7.1.1 Exposure to Italian in the home

Some participants, as explained in section 4.3, indicated on the participant characteristics questionnaire that they are exposed to small amounts of Italian in their home situation. It could, therefore, be argued that these participants had been exposed to some of the target lexical items. However, in conversation with these participants, it was determined that their exposure to Italian was minimal and that their level of both receptive and productive knowledge of standard Italian was not substantially greater than that of those participants who were not exposed to Italian in the home. More importantly, all groups in the study were, as shown in Table 14, to have similar baseline levels of lexical knowledge in Italian. Furthermore, a repeated measures ANOVA comparing the performance at posttest and delayed posttest of learners who answered 'No' to whether Italian was spoken at home with those learners who answered 'Yes' to the same question reveals that in fact, this external exposure was not statistically significant in this study: $F(1,64) = .182$, $p=.671$. As such, the possibility that participants exposed to non-standard Italian had had previous exposure to or were familiar with the target lexical items selected for this study is limited.

7.1.2 Limited qualitative data

While results of the present study show convincingly that song can exert a positive impact on lexical acquisition, it is difficult to know how learners reacted to this type of intervention. Further qualitative data, in the form of self-report, could have provided further insight into whether participants drew from their familiarity with the Song in order to complete the posttest and delayed posttest. Were the participants 'singing' the Song in their heads while completing the tests? The marginal notations provided by some participants indicates that indeed, despite the fact the target lexical items were presented out of context and out of order in both posttest and delayed posttest, learners recognized the lexical items as lyrics from *Gli ostacoli del cuore* and that they therefore drew on their familiarity with the Song to answer the questions. Self-report would have revealed more fully to what extent rehearsal of the Song's lyrics took place in the period between treatments. Likewise, further qualitative data in the form of think-aloud protocols could have revealed to what extent participants liked the Song and could shed light on whether this had any impact on their ability to recall the target lexical items or not.

7.1.3 Size of the study

While every attempt was made to recruit as many learners of Introductory Italian as possible and while the total number of participants in the study was a fairly healthy 66, there was somewhat of a lack of equitable distribution of participants across the groups, largely due to the fact that many participants who had begun the study, failed to attend all treatment sessions and as a result their data had to be excluded from the study. A larger sample size could also have yielded more definitive results, possibly clarifying the relationship between the variables Song and Involvement Load and shedding light on which variable exerts the most effect on the acquisition and retention of the target lexical items.

7.1.4 Inability to control for linguistic background

Transfer from the L1 to the L2 has been widely reported on in SLA research as an important factor in the acquisition process, as discussed in 3.3.1 of this thesis, and could have been a very fruitful avenue to pursue in greater depth in the present study. Unfortunately, because of the vast array of linguistic backgrounds in terms of L1 and L2 proficiency that made up the participant pool of this study (covering nearly 30 languages ranging from French to Embu), it was not possible to analyse the influence of previously known languages in any fine-tuned way. For example, controlling for linguistic background could have provided a clearer picture in terms of the role of cognate status on the incidental acquisition of target lexical items.

7.1.5 Arbitrary testing times

As described in Chapter 3, the posttest and delayed posttest were carried out two weeks and four weeks following the final treatment session respectively. These time frames were selected somewhat arbitrarily as indicators of short-term retention. They were, however, selected based on the constraints of the academic school year, which prevented testing beyond six months. In other words, while the examination of long-term retention is a desirable objective in a study of lexical retention, these time constraints confined this study to an examination of short-term retention (i.e. eight weeks) rather than long-term retention over, say, a period of one year beyond the last treatment. Nevertheless, in comparing the timespans post-final treatment selected for the posttest and delayed posttest in this study with those selected in other studies, the present study's timespans are much greater. For example, Wallace's (1994) study involved a timespan of just 20 minutes between the final trial and the delayed posttest. Crowder, Serafine, & Repp's (1990) and Serafine, Crowder, & Repp's (1984) respective studies both included a posttest immediately following audition. In the present study, the posttest took place two weeks following the final audition while the delayed posttest was administered four weeks following

the posttest. Because of the significantly greater length of time between final audition and post-test in this experiment compared with other similar experiments and because of the significant results obtained here, the present study does provide compelling conclusions concerning the facilitative effect of Song and involvement load on both lexical acquisition and on short-term retention. Replication of this project with the addition of a long-term retention component is desirable and would provide greater insight into the whether the facilitative effects of song and involvement load can be maintained in the long-term.

7.1.6 Exposure to target items beyond the study

The present study attempted to examine the effect of Involvement Load and Song on the incidental acquisition and retention of specific lexical items. While every attempt was made to select a song containing lyrics that participants were likely not going to encounter in their language classroom and/or outside of the classroom, it was impossible to control for this. The participants' language instructors could have utilised some of the target lexical items in the classroom and those participants who indicated Italian is spoken in their home could also have been exposed to the lexical items to varying degrees in their home situation. In order to further minimize this possibility and to virtually eliminate the likelihood participants could execute an Internet search of the Song used in the study, the title of the Song was never revealed to the participants at any time during the study. However, it is possible that participants with a particularly excellent memory and/or a keen interest in the Song could have done just that by conducting an Internet search of some of the lyrics, finding the Song, and listening to it online. Some participants could, therefore, have had more exposure to the lexical items than other participants and this could have, by consequence, improved some participants' scores on the posttest and delayed posttest. The probability that this could have taken place is remote but is nonetheless a possibility.

7.2 Considerations for future research

The present study sought to determine the extent to which Song may or may not influence beginner learners' acquisition of the Italian lexicon by way of an incidental learning experiment and, as shown by the results of this experiment, participants who were exposed to Song did recall target lexical items better on posttest and delayed posttest than their counterparts who were not exposed to a Song. The results underline both the potential benefits of incidental learning with respect to language acquisition and lexical acquisition in particular, as well as the effectiveness of input enhancement and rehearsal on the receptive and productive knowledge of the lexicon that the beginner L2 learner develops. While this study offers a thorough evaluation of the influence of Song on the lexical acquisition process and provides convincing reasons it should be reconsidered as a pedagogical tool in the L2 classroom, several avenues for further research should be explored in order to gain an even deeper understanding of its role in and influence on L2 language acquisition.

One such avenue could involve determining whether the results obtained in this study of adult beginner learners of Italian could be replicated in a similar experiment using advanced L2 learners of Italian. As discussed at length in Chapter 1, there is a fairly robust body of research supporting the use of song as a language learning tool for both L1 and L2 learning in children, however, when it comes to examining the effects of song on the L2 language learning of adults, the paucity of research is staggering. While the present study has attempted to fill that void, it remains to be seen whether Song would continue to show the same facilitative effects on more advanced learners of the language.

A second area that could offer interesting insights into the facilitative effects of song on language acquisition is in determining the extent to which a learner's taste in music may affect

the facilitative effect of music on lexical acquisition. That is, does music always have a facilitative effect on lexical acquisition or could this facilitation be inhibited if the learner dislikes the melody? Wallace (1994) showed that when multiple melodies were presented to participants, retention was inhibited due to the additional information required to process both melody and text. In other words, melody can sometimes act as a distractor instead of a facilitator. Would the same effect be found if a participant were not particularly fond of a song? In other words, if a participant does not find a particular song pleasant, would he/she be distracted from the text so as to inhibit the formation of strong connections between the text and the melody by 'tuning out' the melody? This would imply that the song may not make the lyrics more salient and also that the subvocal rehearsal that would normally be expected to take place and which is so crucial to short-term memory storage would not, in fact, occur. Could it also be that a song a listener considers to be unpleasant and yet is simple in its melody, may nevertheless facilitate the retention of lexical items by virtue of the fact that it is 'catchy' and in spite of the listener's distaste of it, nevertheless remain memorable?

Finally, an increasingly fruitful area of inquiry has been in the field of neuroscience where brain imaging technology is used with the intention of further understanding how the human brain processes information by determining which parts of the human brain are used to carry out specific activities. While neuroscientists have utilised these imaging techniques to conduct research on music and language in an attempt to understand whether music and certain aspects of language acquisition and processing involve the same parts of the brain, most studies have utilised participants with cognitive disorders (e.g. aphasia, amusia) or neurological disorders (e.g. multiple sclerosis). To the best of my knowledge, no study has been located to date which focuses on music and L2 language learning and which utilises healthy adult L2 learners in neuroimaging tests to determine how the human brain processes the musical and

lexical aspects of a song in an L2 and how that information is then stored in the brain. What parts of the brain are stimulated when an L2 learner hears a familiar L2 song? Are those same areas stimulated when the lexical items making up the song's lyrics are encountered exclusive of the song?

It is hoped that these and many other questions pertaining to the influence of song on L2 language learning will be explored both in the L2 research forum as well as in the L2 classroom so as to further exploit it as an effective, efficient, and appealing language learning tool. As the present study attempts to illustrate, song is much more than a mere distractor from the 'serious' undertaking of language learning and should instead be perceived as a tool that can not only enhance the language acquisition process but one that can render that process both meaningful and enjoyable.

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Appendix A

Letter of Information

Dear Language Student,

I am a PhD candidate at the University of Toronto in the Department of Italian Studies and I am currently conducting research on teaching and learning Italian through different media and techniques.

I am looking for students enrolled in an *Introductory Italian* course at XXXX to participate in a study. The study would involve filling out a questionnaire asking for basic biographical information, listening to and/or reading a text, and completing exercises. These tasks will take place during regular classroom contact hours. You are not required to attend any meetings or to complete any assignments outside of the classroom.

Please note that participation in this project is entirely voluntary and you may withdraw from the study at any stage and for any reason with no consequence to you. Should you choose to withdraw, any and all information I will have collected from you will be destroyed immediately and systematically. You need not provide justification for your withdrawal. Also, you may refuse to answer any question or complete any part of any task in this project.

I do not foresee any risks to you should you choose to participate in this study other than the highly unlikely possibility that your personal information be revealed. I will take every precaution to prevent this from happening, including the following measures: 1) I will be the only person familiar with your participation in this project. Although my thesis co-supervisors Dr. Michael Lettieri and Dr. Rena Helms-Park will review the data, your name and any other identifying information will not be visible to them. 2) At no time will I reveal any identifying information about you. 3) You will be assigned a code number. 4) I will conceal your identity by storing all data I collect on paper and on erasable compact discs kept inside a locked cabinet in my home for a period of five (5) years. 5) I will systematically destroy all the data at the end of this five-year period by erasing and shredding the media on which they were stored. 6) Results will be reported in aggregate and if individual participants' responses are discussed, I will only refer to code numbers and will never make reference to any identifying details.

No compensation, monetary or otherwise, is offered for participation in this project.

If you are interested in the results of this project, I would be pleased to send you a summary of my findings. I intend to present my results at conferences and to publish articles about the study.

My findings may be beneficial to language learners, language educators, and researchers by shedding light on how classroom activities affect the language acquisition process.

If you are willing to participate in this project, please complete **both attached Letters of Consent and place ONE in the envelope provided. Seal the envelope and return it to me**. **DO NOT WRITE ON THE ENVELOPE**. **Please keep the second** Letter of Consent as well as this letter for your reference.

If you are NOT willing to participate in this study, simply leave the Letters of Consent blank. Place ONE in the envelope provided, seal the envelope, and return the envelope to me . DO NOT WRITE ON THE ENVELOPE.

I would be happy to answer any questions you might have. You may contact me by email at vanessa.rukholm@utoronto.ca .

You may also address any questions or concerns to my research co-supervisors:

Dr. Michael Lettieri
Thesis Supervisor
michael.lettieri@utoronto.ca

Dr. Rena Helms-Park
Thesis Co-Supervisor
email: rhelms@utsc.utoronto.ca

If you have any questions about your rights as a participant in this study, you may also contact the Ethics Review Office at (416) 946-3273.

Thank you for your time and consideration.

Sincerely,

Vanessa Rukholm, PhD Candidate
Department of Italian Studies,University of Toronto

Appendix B

Consent Form

I, _____ have thoroughly read the information provided to me in
(clearly **PRINT** your name in full)

the Recruitment Letter related to University of Toronto PhD candidate Vanessa Rukholm's doctoral research project. I have asked questions and have received answers. I consent to participate in this study. I have been given a copy of this form

Signature_____ Date_____

Signature of Researcher_____ Date_____

Appendix C

Participant Characteristics

Please <u>DO NOT</u> indicate your name, in part or in full, anywhere in this document.

<u>Instructions</u>: Read the questions carefully. Please circle or write the answers to the following questions to the best of your ability. If you wish to provide further information for clarification, please do so overleaf.

1. Gender: MALE FEMALE

2. Age: 17-21 22-25 26-29 30+

3. Please indicate which year of your programme you are in (if you are not enrolled in a programme, simply indicate under 'Other' the highest level of education you have completed):

   1st 2nd 3rd 4th Other:_____

   (specify)

4. What is your native language (i.e. what is the first language you learned)? _____

5. List in chronological order the languages <u>other than your native language</u> you have learned (either formally or informally) and how long you have used them (*if you used to use one or more languages but no longer use them, please indicate this in the margin*):

   Language 1: _____ _____years/_____months

   Language 2: _____ _____years/_____months

   Language 3:_____ _____years/_____months

6. For each language you know other than your native language, please rate your proficiency in the following areas:

Language 1 :_____

Listening:	1 low	2	3	4	5 high
Speaking:	1 low	2	3	4	5 high
Reading:	1 low	2	3	4	5 high
Writing:	1 low	2	3	4	5 high

Language 2:_____

Listening:	1 low	2	3	4	5 high
Speaking:	1 low	2	3	4	5 high
Reading:	1 low	2	3	4	5 high
Writing:	1 low	2	3	4	5 high

Language 3:_____

Listening:	1 low	2	3	4 high	5
Speaking:	1 low	2	3	4 high	5
Reading:	1 low	2	3	4 high	5
Writing:	1 low	2	3	4	5 high

7. Have you lived anywhere other than Canada for an extended period of time (i.e. more than 6 months)? Yes No

If yes, please fill out the following table:

Country	Length of stay	Language(s) you used while there

8. Indicate as a percentage how many hours you use the following languages in an <u>average</u> week:

Native language:_____ _____%/ week

<u>Other languages</u>:

Language 1: _____ _____%s/week

Language 2:_____ _____%/week

Language 3:_____ _____%/week

9. Please indicate if the following people spoke/speak Italian in your home:

Mother: Yes No

Father: Yes No

Grandmother: Yes No

Grandfather: Yes No

Other: _____

(specify)

Appendix D

Vocabulary Knowledge Scale – Pretest

Code number:_____

Instructions: **For each of the following Italian words, circle the NUMBER corresponding to the description that best reflects your knowledge of the word/expression at this time. Try to be as truthful as possible.**

bambino
1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

magia
1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

portare
1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

pacco
1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

scartare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

ostacolo

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

nevicare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

cuore

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

volentieri

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

capire

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

principio

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

naufragare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

attaccare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

allegria

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

coccolare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

sentire

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

regalo

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

tenere

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

fratello

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

dondolare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

pensiero

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

buttare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

segreto

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

rumore

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

morire

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

tempesta

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.

(**If you do this section, please also do section 4.**)

Appendix E

Lyrics for Low Involvement groups

C'è un **principio** di magia	principle; magic
Fra gli **ostacoli** del cuore	obstacles; heart
Che si **attacca volentieri**	attaches;willingly
Fra una sera che non **muore**	dies
E' una notte da **scartare**	to unwrap
Come un **pacco** di Natale	package
C'è un principio d'ironia	
Nel **tenere coccolati**	to hold; cuddled
I **pensieri** più **segreti**	thoughts; secretive
E trovarli già svelati	
E a parlare ero io	
Sono io che li ho prestati	
Quante cose che non sai di me	
Quante cose che non puoi sapere	
Quante cose da **portare** nel viaggio insieme	to bring/carry
C'è un principio di **allegria**	happiness
Fra gli ostacoli del cuore	
Che mi voglio meritare	
Anche mentre guardo il mare	
Mentre lascio **naufragare**	to drown
Un ridicolo pensiero	
Quante cose che non sai di me	
Quante cose che non puoi sapere	
Quante cose da portare nel viaggio insieme	
Quante cose che non sai di me	
Quante cose devi meritare	
Quante cose da **buttare** nel viaggio insieme	to throw/toss
C'è un principio di energia	
Che mi spinge a **dondolare**	to rock
Fra il mio dire ed il mio fare	
E **sentire** fa **rumore**	to hear; noise
Fa rumore camminare	
Fra gli ostacoli del cuore	

Quante cose che non sai di me
Quante cose che non puoi sapere
Quante cose da portare nel viaggio insieme
Quante cose che non sai di me
Quante cose che non vuoi sapere
Quante cose da buttare nel viaggio insieme

Appendix F

Lyrics for High Involvement groups

C'è un principio di magia
Fra gli ostacoli del cuore
Che si attacca volentieri
Fra una sera che non muore
E' una notte da scartare
Come un pacco di Natale

C'è un principio d'ironia
Nel tenere coccolati
I pensieri più segreti
E trovarli già svelati
E a parlare ero io
Sono io che li ho prestati

Quante cose che non sai di me
Quante cose che non puoi sapere
Quante cose da portare nel viaggio insieme

C'è un principio di allegria
Fra gli ostacoli del cuore
Che mi voglio meritare
Anche mentre guardo il mare
Mentre lascio naufragare
Un ridicolo pensiero

Quante cose che non sai di me
Quante cose che non puoi sapere
Quante cose da portare nel viaggio insieme

Quante cose che non sai di me
Quante cose devi meritare
Quante cose da buttare nel viaggio insieme

C'è un principio di energia
Che mi spinge a dondolare
Fra il mio dire ed il mio fare
E sentire fa rumore
Fa rumore camminare
Fra gli ostacoli del cuore

Quante cose che non sai di me
Quante cose che non puoi sapere
Quante cose da portare nel viaggio insieme

Quante cose che non sai di me
Quante cose che non vuoi sapere
Quante cose da buttare nel viaggio insieme

.

Appendix G

Activities for Lyrics/Low Involvement groups

Please <u>do not</u> include your name anywhere on this form.

<u>Instructions</u>: Answer the following questions as completely as possible. You may refer to the poem provided to you.

1. Quanti anni ha l'autore? Giustifica la tua risposta.

_____
_____

2. <u>Vero o falso?</u> Circle V for 'vero' or F for 'Falso' for each statement based on the poem.

a) The author compares relationships to a voyage.	V	F
b) The author's lover knows everything about him/her.	V	F
c) The author says his/her lover wants to know everything about him/her.	V	F
d) The poem refers to matters of spirituality.	V	F

3. Explain the irony of the 2nd strophe.

_____
_____
_____
_____

4. While listening to the poem being read aloud, fill in the blanks with the missing words.

C'è un principio di magia
_____ gli ostacoli del cuore
Che si attacca volentieri
Fra una _____ che non muore
E' una notte da scartare
Come un pacco di Natale

C'è un principio d'_____
Nel tenere coccolati
I pensieri più segreti
E trovarli già svelati

E a _____ ero io
Sono io che li ho prestati

Quante cose che non sai di me
Quante cose che non puoi sapere
Quante cose da portare nel _____ insieme

C'è un principio di allegria
Fra gli ostacoli del cuore
Che mi voglio meritare
Anche mentre guardo il _____
Mentre lascio naufragare
Un ridicolo pensiero

Quante cose che non sai di me
Quante cose che non puoi sapere
Quante cose da portare nel viaggio insieme

Quante cose che non sai di me
Quante cose _____ meritare
Quante cose da buttare nel viaggio insieme

C'è un principio di _____
Che mi _____ a dondolare
Fra il mio dire ed il mio fare
E sentire fa rumore
Fa rumore _____
Fra gli ostacoli del cuore

Quante cose che non sai di me
Quante cose che non puoi sapere
Quante cose da portare nel viaggio insieme
Quante cose che non sai di me
Quante cose che non vuoi sapere
Quante cose da buttare nel viaggio insieme

5. Why does the author say ‘Quante cose che non puoi sapere’ in the second last strophe? Do you agree with this statement? Why or why not?

Appendix H

Activities for High Involvement groups

Please <u>do not</u> include your name anywhere on this form

Instructions: Complete the following activities to the best of your ability. You may refer to the song lyrics you received.

1.a) Without using any aids (e.g. dictionary, textbook, etc.), can you infer the meaning of the following words found in the lyrics? <u>Discuss with a partner</u> and circle the letter corresponding to the best answer from the choices provided.

1. **cuore**	a) quarry	b) heart	c) road	d) mind
2. **attacca**	a) attacks	b) attaches	c) ties	d) kills
3. **buttare**	a) to throw away	b) to watch	c) to sail	d) to bring
4. **ostacoli**	a) enemies	b) pieces	c) obstacles	d) aspects
5. **pacco**	a) package	b) group	c) bag	d) gathering

b) Now that you have discussed the possible meanings of the words in exercise a), look up each word in your dictionary to ascertain their meaning in the context of the song. Next, write an <u>original</u> sentence (*in italiano*) that provides a definition for each of the words from question 1. You may work with a partner.

1. cuore:_____
2. attacca:_____
3. buttare:_____
4. ostacoli:_____
5. pacco:_____

2. Fill in the blanks with the appropriate word from the list below. Each word can only be used once. Note that there are more words than blanks! You may work with a partner. **DO NOT use a dictionary!**

i) Shhh! Non dire a nessuno i _____ del nostro club!

ii) Quando il treno passa, fa molto _____!

iii) Parla piu' forte! Non posso _____ bene!

iv) A Natale, ci sono molti pacchi da _____.

v) Attenzione nell'oceano! E' possibile _____ come il Titanic!

vi) Il mio cane si chiama Spot; e' bello da _____.

vii) Certo che faccio un favore per te! Io lo faccio _____!

viii) La ragazza sorride sempre; lei ha molta _____.

ix) Il mio cane e' molto vecchio e non sta bene; il veterinario dice che sta per _____.

x) Quando andiamo in viaggio, ci sono molte valige da _____.

xi) Non so che cosa prendere al bar; continuo a _____ tra un'aranciata e una limonata.

xii) Per i bambini, Natale (*Christmas*) è una festa piena di _____.

sentire	portare	rumore	dondolare	naufragare
volentieri	segreti	principio	magia	comprare
caldo	scartare	allegria	coccolare	morire

3. Do you agree with the singers' view that **secrets are an inherent part of relationships**? Write a paragraph <u>in Italian</u> of approximately 10 sentences discussing your point of view. Be sure to use the following words at least once in your composition: **tenere, segreti, pensieri**, **principio, portare.** You can use any genre you like (e.g. dialogue, letter, diary entry, etc.) and you can make your paragraph as funny, witty, or as absurd as you like! Use your imagination and have fun!

Appendix I

Posttest

Instructions: For each of the following Italian words, circle the NUMBER corresponding to the description that best reflects your knowledge of the word/expression at this time. Try to be as truthful as possible.

capire

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

ostacolo

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

portare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

volentieri

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

scartare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

magia

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

tempesta

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

cuore

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

pacco

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

nevicare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

allegria

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

naufragare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

attaccare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

principio

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

tenere

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

pensiero

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

fratello

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

morire

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

regalo

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

dondolare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

sentire

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

buttare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

segreto

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

rumore

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

coccolare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

bambino

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

Appendix J

Delayed Posttest

Instructions: For each of the following Italian words, circle the NUMBER corresponding to the description that best reflects your knowledge of the word/expression at this time. Try to be as truthful as possible.

pacco

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

nevicare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

attaccare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

tenere

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

morire

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

principio

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

fratello

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

capire

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

ostacolo

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

naufragare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

pensiero

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

cuore

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

allegria

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

magia

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

volentieri

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

portare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

tempesta

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

scartare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

sentire

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)

5. I can use this word in a sentence:_____.
(If you do this section, please also do section 4.)

rumore

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.
(If you do this section, please also do section 4.)

regalo

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.
(If you do this section, please also do section 4.)

bambino

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.
(If you do this section, please also do section 4.)

coccolare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.
(If you do this section, please also do section 4.)

dondolare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____.
(If you do this section, please also do section 4.)

segreto

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)

buttare

1. I don't remember having seen/heard this word before.
2. I have seen/heard this word before, but I don't know what it means.
3. I have seen/heard this word before, and I think it means _____. (provide a synonym or translation)
4. I know this word. It means _____ .(provide a synonym or translation)
5. I can use this word in a sentence:_____. (If you do this section, please also do section 4.)