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Idioms and the Structure of the Mental Lexicon

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Writing a dissertation never felt like writing a dissertation. Or at least, as I thought ‘writing a dissertation’ would feel before embarking aboard. The journey has reached its point of culmination, epitomized in this written collection of words – but this arbitrary point is merely a pause along the way, as the journey continues, like water, to flow endlessly.

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Abstract (Hebrew)

בעבודה זו אני בוחנת את המבנה של הלקסיקון המנטלי דרך המחקר של ניבים לשוניים, דהיינו, ביטויים כגון *הוסיף* או *למדורה* או *סוכב אותו על האצבע הקטנה*. בעקבות מחקריהן של הורבט וסילוני (Horvath & Siloni 2009, 2012), אני בוחנת את התכונות של הניבים השונים בעברית וברוסית במטרה ללמוד גם על הארגון הפנימי של הלקסיקון המנטלי, הן אצל הדוברים הצעירים והן אצל הדוברים הבוגרים.

בבסיס מחקר זה נמצא מודל ה-TSS שמציעות הורבט וסילוני (2009, 2012). המודל פורס שורה של שאלות מחקריות אודות ייצוג, אחסון, ותפוצת ניבים מסוגים שונים. התשובות הפרטיקולריות שניתנות במודל נתמכות הן על ידי שיקולים תיאורטיים והן על ידי ממצאים אמפיריים. אחת ההבחנות המרכזיות של המודל הינה בין ניבים (א) פראזליים (=צירופיים), ו-(ב) קלוזליים (=פסוקיים). הורבט וסילוני (2012) מציעות שישנו צרור תכונות הנובע מאופן האחסון השונה של שני סוגי הניבים, דהיינו, אחסון תחת הראש הלקסיקלי במקרה של (א) ואחסון ברשימה נפרדת במקרה של (ב). המחקר הנוכחי על רוסית, שפה שטרם נחקרה מזווית מחקר זו, מביא עדות אמפירית נרחבת לקיומה של ההבחנה בין שני סוגי הניבים גם ברוסית ולאופן האחסון הנפרד של הניבים הקלוזליים.

בעבודתי, ניבים פראזליים נחקרים לעומק בשני מוקדים נוספים: (1) אני בוחנת את אופן רכישתם אצל ילדים אשר רוכשים עברית כשפת אם. מכיוון שמחקר רכישת הניבים בעברית הינו קרקע לא חרושה, המחקר הנוכחי איננו אלא קצה הקרחון. אנו למדים שילדים בכיתות ג' לא מתקשים כלל בהבנת ניבים לשוניים מסוגים שונים, אך השלמתם לוקה בחסר באופן משמעותי. בנוסף, אנו למדים כי תכונה מסוימת של ניבים לשוניים, דהיינו, דה-קומפוזיביליות (ניתנות לפירוק), בעלת תפקיד מכריע בתהליך הרכישה. בנוסף לניסויי הרכישה, (2) אני בוחנת לעומק את הניבים הפראזליים ברוסית. בעקבות הורבט וסילוני (2009), אני בוחנת את הניבים הלשוניים מתוך היפותזת האחסון תחת הראש הלקסיקלי והניבוי הנגזר לגבי קיומם של ניבים "יחידאים" (unique idioms), כלומר, ניבים אשר קיימים רק עם דיאטזה ספציפית של הפועל העיקרי. הממצאים האמפיריים מרוסית מאששים את היפותזת האחסון תחת הראש הלקסיקלי, למרות הבדל אחד מהותי בין שתי השפות, דהיינו, הדלות של ניבים יחידאים עם סביל תארי. על מנת להסביר את ההבדל, אני פונה לבחון משלב "נמוך" ברוסית המדוברת, בו אני בוחנת משמעויות חדשות הניתנות למילים קיימות. כשאנו בוחנים דוגמאות אלה של סחף סמנטי (semantic drifts), אנו מגלים שצורות קיימות של סביל תארי מקבלות לעיתים משמעויות חדשות, וולגריות במקצת. הנקודה החשובה ביותר, לצרכינו כאן, היא השימוש באותם מקרים של סחף סמנטי על מנת לבחון את

אופיו של הלקסיקון המנטלי. קיומן של משמעויות חדשות הייחודיות לדיאטזה מסויימת של הפרדיקט וקיומם של ניבים הייחודיים לדיאטזה מסויימת של הפרדיקט – שניהם יחדיו מראים שהלקסיקון חייב להיות רכיב אקטיבי של הדקדוק המנטלי (כפי שמציעים, למשל, Everaert 1990; Jackendoff 1997; Reinhart 2000, 2002) ולא רק רשימת ערכים פאסיבית (כפי שמציעים, למשל, Borer 2005; Marantz 1997; McGinnis 2002; Pyllkkänen 2002; Ramchand, 2006). בנוסף, קיומם מראה שמידע אודות הדיאטזה והקטגוריה הלקסיקלית חייבים להיות מקודדים בלקסיקון. כך, בעודנו משתמשים בניבים לשוניים וסחף סמנטי ככלי מחקר וכמושא המחקר יחדיו, אנו מגלים אדמות חדשות הן על הניבים הלשוניים עצמם והן על הארכיטקטורה של הלקסיקון המנטלי.

עבודה זו בנויה כדלקמן. הפרק הראשון מכיר לקוראיו את התופעה של ניבים לשוניים ואת המסגרת התאורטית של המחקר הנוכחי, דהיינו, מודל ה-TSS של הורבט וסילוני. בסיום הצגת הרקע התאורטי, אני מציגה את שאלות המחקר העיקריות שילוו אותנו לאורכו של המחקר. הפרק השני מוקדש לבחינה של רכישת הניבים בעברית. לאחר הצגת הרקע התאורטי, אני ממשיכה להציג ולדון בשני מחקרים חדשניים שנעשו על ילדים בכיתה ג' ובדקו את ההבנה והשלמה של סוגים שונים של ניבים פראזליים. הפרק השלישי מציג בפירוט את עבודתן של הורבט וסילוני (2009) אשר עושה שימוש בניבים יחיאים ככלי למחקר של מבנה הלקסיקון. לאחר הצגה זו, אני פונה בפרק ארבע לבחון ולדון במחקר קורפוס רחב מימדים על ניבים פראזליים ברוסית. הדמיון והשוני בין עברית ורוסית נחקרים לעומק, כשבמרכז הפרק עומד השימוש המיוחד בסחף סמנטי יחידאי במשלב נמוך של השפה המדוברת. הפרק החמישי פונה לבחון לעומק ניבים קלזליים בשתי השפות, והשוואה ביניהם לניבים הפרזאליים. לאחר הצגת מחקרן של הורבט וסילוני (2012), אני בוחנת את ממצאי המחקר של שני קורפוסים נרחבים של ניבים קלזליים בעברית ורוסית. אני מציעה, כשפי שציינתי לעיל, שההבדל בהתנהגות של שני סוגי הניבים נובע מהבדל באופן אחסונם. צרור התכונות הנובע מהבחנה זו נידון בהרחבה, כמו גם שאלות נוספות העולות מן המחקר הנוכחי ומזמינות מחקר עתידי.

Abstract*

This dissertation investigates the structure of the mental lexicon from the perspective of idiomatic expressions. Following the work of Horvath & Siloni (2009, 2012), I examine the properties of different types of idioms in Hebrew and Russian, in order to learn, in addition, about the organization of the mental lexicon of both young and adult native speakers.

This dissertation is rooted in the Type-Sensitive Storage model of Horvath & Siloni (2012). One of its major distinctions is between (i) phrasal idioms and (ii) clausal idioms, which are proposed to be stored differently in the mental lexicon. Based on extensive empirical evidence from Hebrew, as well as theoretical argumentation, phrasal idioms are suggested to be stored with the lexical entry of their head, while clausal idioms are suggested to be stored on an independent list (Horvath & Siloni 2012). This dissertation provides novel and extensive empirical evidence from Russian supporting the proposed distinction between the two types of idioms, as well as the proposed difference in their storage methods.

This work further explores phrasal idioms from two different directions: (a) first, I examine their course of acquisition with L1 learners of Hebrew. As the study of idiom acquisition in Hebrew is an ‘unploughed land’, so to speak, this study is just an initial step in the journey. We learn that third-graders have little difficulty understanding various types of idiomatic expressions, but find their completion quite challenging. Furthermore, we learn that a specific property of idiomatic expressions, namely, decomposability, plays a crucial role in their course of acquisition. In addition to the acquisition study, (b) I examine in depth the nature of phrasal idioms in Russian. Following Horvath & Siloni (2009), these idioms are studied in light of the head-based storage hypothesis and

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its prediction regarding the existence of unique idioms, that is, idioms available only with a specific diathesis of their verbal head. Russian findings support the head-based storage hypothesis, though we find one significant difference between the two languages, namely, the scarcity of unique idioms with adjectival passives. In order to account for this difference, I turn to what might be seen as a ‘sub-standard’ variety of Russian and its novel usage of familiar words. Examining these ‘semantic drifts’, we see that adjectival passives often acquire novel, vulgar meanings, in this jargon. More significantly for our purposes, we see how these semantic drifts can be used in order to delve into the nature of the mental lexicon. Using them together with idiomatic expressions, we learn that the lexicon must be an active component of grammar (as suggested, for instance, by Everaert 1990; Jackendoff 1997; Reinhart 2000, 2002) and not a mere list of items (as suggested, for instance, by Borer 2005; Marantz 1997; McGinnis 2002; Pylkkänen 2002; Ramchand 2006). We also learn that diathesis and category information must be stored along with the relevant lexical items in order to account for the existence of unique idioms and unique semantic drifts. Thus, using idioms (and semantic drifts) both as a tool of research and as its subject matter, we uncover and map out both the properties of idiomatic expressions and the architecture of the mental lexicon.

This dissertation is structured as follows. The first chapter acquaints the reader with the phenomenon at hand, namely, idiomatic expressions. Following the theoretical background, it outlines the major claims and assumptions of the Type-Sensitive Storage model (Horvath & Siloni 2012) underlying this dissertation. Finally, it presents the main research questions at the heart of this dissertation. The second chapter examines the L1 acquisition of phrasal idioms in Hebrew.

Following the presentation of theoretical background, I turn to discuss two novel experimental studies I conducted, namely, comprehension and completion of idioms, conducted on typically developing third-graders acquiring Hebrew. The third chapter presents in detail the work of Horvath & Siloni (2009) on Hebrew phrasal idioms, demonstrating how the distribution of idiomatic

expressions across the different diatheses can shed light on the structure of the lexicon.

Subsequently, the fourth chapter presents in detail the findings of a novel corpus study on Russian phrasal idioms. The similarities and differences with Hebrew are then discussed and analyzed, suggesting the necessity to examine additional registers in order to view the complete picture. The use of an additional tool, namely, semantic drifts, is defined and illustrated. The study shows that semantic drifts of single words behave on a par with idiomatic interpretations of whole expressions in that they can be uniquely available with a specific diathesis of their predicate – provided the diathesis is formed in the lexicon. Furthermore, the results show that Russian phrasal idioms, on a par with their Hebrew counterparts, are stored with their lexical heads, providing additional support for both the head-based storage method of phrasal idioms and the word-based nature of the lexicon. Finally, the fifth chapter is devoted to the exploration of clausal idioms in both languages. I present and discuss the findings of two comprehensive corpus studies of Russian and Hebrew clausal idioms. As mentioned above, the significant differences between clausal and phrasal idioms support the conclusion that they differ in their specific lexical storage method. A cluster of predicted differences is examined and discussed, concluding this study with open questions awaiting future research.

1. Idioms: History, Theory and Research Questions

The goal of this introductory chapter is threefold: first, it aims to acquaint the reader with the phenomenon at hand, namely idiomatic expressions, along with the main questions raised in their linguistic research to date. Second, it aims to present the theoretical framework underlying this dissertation, namely, the Type-Sensitive Storage method (TSS henceforth) developed by Horvath & Siloni (2009, 2012). Third, following both the historical and the theoretical backgrounds, it aims to outline the research questions at the heart of this study.

This chapter is structured as follows. Section 1.1 presents the historical background for what follows, offering an overview of the unique properties of idioms and the major issues examined in their linguistic exploration. Section 1.2 presents the TSS model underlying this study (Horvath & Siloni 2009, 2012). Finally, section 1.3 presents the goals and the research questions of this dissertation.

1.1 Historical Background

First, let me illustrate the phenomenon at the heart of this study, namely, idiomatic expressions.

Observe the following examples:

1. *kick the bucket*
Idiomatic: 'Die'
2. *spill the beans*
Idiomatic: 'Reveal a secret'
3. *can't see the forest for the trees*
Idiomatic: 'Unable to discern an overall pattern from a mass of details'

4. *varit'sja v sobstvennom soku* (Russian)¹
 cook-unacc.² in own juice
 Literal: 'Cook in one's own juice'
 Idiomatic: 'Work in isolation'
5. *ha-deshe shel ha-shaxen yarok yoter* (Hebrew)
 the-grass of the-neighbor green more
 Literal: 'The neighbor's grass is greener'
 Idiomatic: 'Other's circumstances seem more desirable than one's own'

Evidently, the idiomatic interpretation in (1)-(5) is not calculated solely from the literal meanings of these utterances' subparts and their syntactic structure. For the time being, let us assume a rather descriptive definition along the following lines: "An idiom is a stereotyped expression with a conventional meaning that cannot necessarily be deduced from the meanings of the words it contains" (Gibbs, 1994). In what follows (i.e. section 1.2), this definition is made more precise – but for now, it will suffice as is.

Much like the Roman double-faced god Janus, idioms are curious creatures – on the one hand, they seem to have phrase-structure, but on the other hand, their interpretation is conventionalized and often underivable or even unguessable from their composing parts. It is no wonder, then, that this unique combination of syntactic structure and non-compositional interpretation has fascinated philosophers and linguists from ancient times, starting with Panini and Aristotle, and continuing to the current vast and diverse research in both theoretical and experimental linguistics.

What are, then, the questions driving this manifold linguistic research of idioms? First, and most prominently, the question arises as to their process of comprehension. Do we access the relevant, idiomatic, meaning directly or is it a serial, multiple-stage process? Does the parsing of idioms

¹ The following transliteration is used for Russian data throughout this work: a=a б=в v=v г=g д=d e=e ё=jo ж=zhh з=z и=i й=j к=k л=l м=m н=n o=o п=p р=r c=s т=t y=u ф=f x=x ц=c ч=ch ш=sh щ=shh ь=" ы=y ь=' э=e ю=ju я=ja

² Throughout this dissertation, the labels 'unacc.' (=unaccusative) and 'trans.' (=transitive) are added only when the English gloss is ambiguous between the two interpretations; when the gloss is unambiguous (e.g. *fell*), it is used without additional clarifications. For a discussion of the transitive/unaccusative alternation, see chapter 3, section 3.1.

require a special mechanism, or is it the same process used in parsing of literal language? At what stage of processing do we make use of the contextual information, both linguistic and situational? Next, the question arises as to their storage: are idioms stored with one of their composing parts, or on a separate list, as ‘big chunks’? Third, the question arises as to their acquisition, both in L1 and L2 research. How early are idioms acquired by children? How do children learn to associate idioms with their non-literal interpretation? How early in L2 acquisition do learners achieve this knowledge, and does their knowledge of L1 interfere with the process?

As this dissertation addresses in detail both the question of acquisition (chapter 2) and the question of storage (chapters 3, 4 and 5), let me present here some background on the research on their comprehension. This will allow us to better understand the properties of idioms, proceeding to the questions at hand better equipped.

The apparent lack of predictable connection between idioms’ form and interpretation led researchers like Grice (1975) and Searle (1979) to propose the intuitively appealing idea of two-staged processing. This model, referred to in the literature as *Literal-First*, assumes that idiom comprehension happens in two stages: first, we calculate the compositional (literal) meaning, and only at a later stage, upon realizing that it is incompatible with the context, we proceed to the second stage, that of lexical retrieval.³ The influence of this model cannot be underestimated: whether supporting or refuting, all subsequent studies are ultimately related to this notion of literal-first, two-staged processing. Note that at its very core, it distinguishes between the process of comprehending literal and idiomatic language, treating the latter as special or ‘marked’. This difference between literal and non-literal language manifests most clearly in the central prediction of this model: if idioms are processed in two stages, in contrast to literal utterances, their processing is expected to

³ Evidently, the question of comprehension and the question of storage are tightly interrelated. I return to this point in the following subsection.

take more time. Crucially, note that the model is agnostic to context effects and frequency – regardless of either, idioms should take more time to comprehend than literal utterances.

This prediction has been subject to extensive testing, using a variety of methodologies. In their seminal work, Ortony, Schallert, Reynolds & Antos (1978) showed that in a strongly biasing context, idiomatic utterances actually took *less* time to comprehend than their literal counterparts. Clearly, this type of evidence is incompatible with the idea of literal-first in case of idiom comprehension. Following Ortony et al., further research elaborated on the idea that the processing of idiomatic expressions does not differ in its essence from the processing of literal expressions, provided that a strong context is at work (Gibbs 1982, 1984; Glucksberg 1989; Sperber & Wilson 1986).

This line of thinking lead to another influential model, known as Direct Access (Gibbs 1982, 1984). Diametrically opposed to the Literal-First serial model, proponents of the direct access view claim that the idiomatic meaning is accessed immediately, without computing the (irrelevant) literal meaning – provided the context of the utterance is strongly supportive of its idiomatic meaning. This model does not assume any special process for parsing idiomatic expressions, predicting that (in strongly supporting contexts) idiomatic expressions will take no longer to comprehend than their literal counterparts. While some evidence indeed supports this direction (see, among others, Gibbs 1980, 1994, 2002; Glucksberg & Keysar 1990; Needham 1992), a few questions remain unanswered. First, recall that Ortony et al. (1978) showed that the idiomatic utterances took *less* time to read than literal utterances – under the Direct Access view, this is unexplained, as no significant difference in processing times is predicted. Further, the question arises as to processing of idiomatic expressions without any – supportive or not – context.

Recently, these questions have been answered in another type of model, known as the Graded Salience Hypothesis (see Giora 1997, 1999, 2002, 2003). According to this model, processing is

guided by *salience* of meanings, where ‘salience’ is a graded concept referring to meanings rendered more accessible by frequency of usage, familiarity, or contextual enhancement. On a par with the Gricean model, the Graded Salience Hypothesis assumes a serial type of processing, only instead of literal-first, it postulates salient-first. Thus, salient meanings are predicted to be retrieved first, and only if they are incompatible with the contextual information, will the less-salient meanings be accessed. This model readily explains why in strongly supportive contexts, the idiomatic meanings of idioms are processed faster than their literal meaning (as shown in Ortony et al.) – the idiomatic meaning is made salient by the context, making them readily accessible for retrieval. The literal meanings of idiomatic utterances, in contrast, are less-salient, demanding more time and effort. At this point, it becomes evident that idiom comprehension (or processing) and idiom storage are two tightly related questions. Since the comprehension process requires idiom retrieval from the mental lexicon, theories of idiom comprehension imply – explicitly or implicitly – the modus and locus of idiom storage. The question of idiom storage is addressed further below, intertwined with the presentation of the TSS model of Horvath & Sioni (2009, 2012).

1.2 Theoretical Framework: The Type-Sensitive Storage Model (TSS)

As it was mentioned at the beginning of this chapter, my dissertation is anchored in the TSS model, developed in Horvath & Sioni (2012). This model arose out of a series of questions pertaining to idiom storage and distribution across the different verbal diatheses. Empirical studies conducted by Horvath & Sioni (2009, 2012) provided particular answers to these questions, which in turn created a theoretical framework with its own distinctions, assumptions and predictions. Before presenting the major claims and predictions of this model, let me return to the definition of idiomatic expressions and render it more precise.

1.2.1 Idioms: Definition and Types

The general notion of ‘expression whose meaning cannot be derived from its subparts’ is certainly a good starting place to become acquainted with idioms. However, it is an insufficient definition as it does not distinguish idiomatic expressions from other non-literal expressions, such as metaphors, proverbs and irony. And while the term “idiom” doesn’t refer to a category of grammar, in the sense that Adjectives or Nouns are categories of grammar, speakers do have intuitions as to what is considered an idiom in their language. Let us return to the English examples presented at the beginning of this chapter, repeated below for the reader’s convenience as (7)-(9), and compare them with the examples in (10)-(12):

7. *kick the bucket*

Idiomatic: ‘Die’

8. *spill the beans*

Idiomatic: ‘Reveal a secret’

9. *can’t see the forest for the trees*

Idiomatic: ‘Unable to discern an overall pattern from a mass of details’

10. *great minds think alike*

11. *dog is man’s best friend*

12. *you are my sunshine!*

While the expressions in (10)-(12) are familiar and commonly used in English, they are distinct from the expressions in (7)-(9) in that they are lacking a metaphorical aspect to their interpretation. And while the expression in (12) is certainly metaphorical, its idiomatic interpretation is readily derived from the meaning of ‘sunshine’ – hence, can be built compositionally. Thus, (7)-(9) are considered by native speakers of English to be idiomatic expressions, as opposed to (10)-(12). The question arises how to account for this intuitive distinction between the rather similar expressions. In other words, which properties are present in the former but absent in the latter?

Horvath & Siloni (2012) isolate two attributes as the defining properties of idioms: (i) *conventionality* and (ii) *figuration*. Both are considered necessary and jointly sufficient in order for an expression to be classified as idiomatic. The former, *conventionality*, refers to the idiosyncratic and fixed pairing between the idiom's form and its interpretation: the interpretation of an idiom cannot be predicted based on its parts. The latter, *figuration*, refers to the metaphoric nature of its interpretation: only expressions whose subparts are interpreted metaphorically are considered idiomatic. The expression in (12) (*you are my sunshine*) lacks conventionality, while the expressions in (10)-(11) (*great minds think alike*, *dog is man's best friend*) lack figuration, as their subparts are not interpreted metaphorically. In accord with speakers' intuitions, then, these examples are not classified as idioms.

Examples (7)-(9) above, in contrast, are both conventional and figurative, being classified as idiomatic in accord with speakers' intuitions. Importantly, while additional properties of idiomatic expressions have been mentioned in the literature (e.g., *inflexibility*, *proverbiality* and others, discussed extensively in Nunberg, Saw & Wasow 1994), Horvath & Siloni (2009, 2012) show that they are neither necessary nor sufficient in order to delineate idioms from other types of colloquial expressions (e.g. aphorisms, proverbs etc.), hence, should not be part of their definition.

Notice that the term 'idiom' refers to expressions containing more than one word, that is, multi-lexemic expressions.⁴ Easily observed by native speakers of any language, words (i.e. mono-lexemic expressions) often acquire novel meanings, which are usually added by metaphorical extension (see Lakoff & Johnson (1980) for an elaborate discussion). For example, the word *bug*, originally a biological term referring (solely) to a type of insect, has recently acquired two additional meanings: that of a covert listening device and that of software defect. Or, similarly, the word *crane*, originally referring (solely) to a type of bird, now refers (also) to a type of construction equipment. In course

⁴ The term 'word' is used in its traditional sense, but nothing hinges on that, as the distinction between words and roots (Borer 1991; Kratzer 1996) is immaterial at this point. When it becomes relevant, I distinguish the two terms explicitly.

of time, such meanings – to which I will refer as ‘special meanings’ or ‘semantic drifts’ – often become part of the word’s core meaning, resulting in polysemy. There is no question that these additional meanings need to be stored in the lexicon under the relevant word (e.g. *bug*, *crane*) – regardless of whether they are perceived as part of the word’s core meaning or as special, peripheral meanings. In contrast, since multi-lexemic expressions contain (what looks like) syntactic structure, their manner of lexical storage is a tougher question to answer than the storage of mono-lexemic metaphorical extensions of familiar words. This reasoning led Horvath & Siloni (2012) to treat the two as separate phenomena, resulting in the following definition of idioms:

13. Idioms: definition

- Fixed multilexemic expressions are idioms iff their meaning is
- a. conventionalized (unpredictable) and
 - b. metaphoric (figurative)

(Horvath & Siloni 2012: (2))

While it has recently been proposed that ‘special’ meanings of both mono-lexemic and multi-lexemic expressions are in essence no different from each other (Jackendoff 1996; Marantz 1997), I adopt the definition in (13). As my study examines in detail the storage mechanism of idioms, the distinction between mono- and multi-lexemic expressions is crucial. However, I return to semantic drifts (of mono-lexemic expressions) in chapter 4, examining a specific case in which their pattern of distribution parallels that of idiomatic expressions. Until then, the discussion focuses solely on idioms as they are defined in (13), that is, multi-lexemic expressions.

Let me now turn to discuss the different types of idioms – evidently, along with their common traits, idioms differ in a number of ways. Drawing on the work of Horvath & Siloni (2009, 2012), the following four distinctions will be central to this dissertation:

(i) Syntactic Type: Idioms can be phrasal, like *kick the bucket* (1) or *spill the beans* (2), or clausal, like *can’t see the forest for the trees* (3). The terms ‘phrasal’ and ‘clausal’ are used rather intuitively at this point, merely to distinguish between idioms which contain clausal material (like

the modal *can* and the negation morpheme in (3)) and idioms which contain no such material. In chapter 4, these terms are given a precise definition – for now, it is sufficient that the reader becomes aware of this distinguishing property and keeps it in mind for subsequent discussion.

(ii) Transparency (see also Lakoff 1987; Keysar & Bly 1999): Some idioms are more transparent than others, in that their idiomatic meaning can be more easily inferred even without a supporting context. Both (1) and (2) above, that is, both *kick the bucket* and *spill the beans* are less transparent than an idiom like *land on one's feet* 'be lucky or successful after difficult times', in that their meaning is harder to guess or deduce without supportive context. In this work, I will refer to idioms like (1) and (2) as 'opaque' and to idioms like *land on one's feet* as 'transparent'.

(iii) Decomposability (see also Horn (2002); Nunberg, Sag and Wasow (1994); Van der Voort and Vonk (1995)): metaphorical meaning can be compositionally distributed and assigned to the idiom's combining units, like in the idiom *spill the beans* (*spill* representing 'reveal'; *the beans* representing 'a secret'), with the idiom being classified as 'decomposable'. In contrast, the metaphorical meaning of *kick the bucket* 'die' cannot be compositionally distributed onto the idiom's combining units (i.e. it is impossible to divide the meaning in alignment with the idiom's subparts), and in this case, the idiom would be classified as 'non-decomposable'.

(iv) Fullness (see also Koopman & Sportiche (1991)): idioms can be full, like *kick the bucket* or *spill the beans*, and they can be gapped, like *drop X a line* 'send X a letter' or *drive X up the wall* 'irritate X'. The difference lies in the existence of a gap, represented by X, which has to be filled by a contextually appropriate lexical item (e.g. *John really drives his boss up the wall* or *drop me a line*).

Having presented the readers with the precise definition of idiomatic expressions, along with their different manifestations, let us move to examine the question of idiom storage.

1.2.2 Idiom Storage

As it is noted in Horvath & Siloni (2009, 2012), the primary question pertaining to idiom storage would be:

(A) Where are idioms stored? (locus)

Two answers come to mind: either idioms are stored as part of **linguistic** knowledge, or they are stored as part of **extra-linguistic** knowledge (e.g. world knowledge). The general agreement in the current linguistic literature is that idiomatic expressions are part of linguistic knowledge, as they encode a pairing between form and meaning unique to a given language and often independent of world knowledge (see, e.g., Jackendoff 1997; Horvath & Siloni 2009, 2012). The empirical work conducted in this dissertation provides additional support for the linguistic storage of idioms in chapters 4 and 5. Let us assume, then, that idioms are stored with other linguistic items, and proceed to the following question pertaining to their modus of storage:

(B) How are idioms stored in the mental lexicon? (modus)

This question becomes especially acute when their dual nature is considered: on the one hand, idioms behave like complete units with conventionalized meaning; on the other hand, they exhibit what looks like syntactic phrase-structure and are often amenable to syntactic transformations. In other words, they behave at once as ‘big chunks’ and as internally structured and analyzable units. Two plausible answers to (B) are suggested in Horvath & Siloni (2009, 2012):

14. (i) **Independent Storage**: idioms are stored independently of their lexical items

(ii) **Sub-entry Storage**: idioms are listed within the lexical entry of one (or more) of their lexical items

An illustration of the first answer, suggested already in the early seventies, would be the Separate List Model of Bobrow & Bell (1973). This model posits that idioms are stored on a separate list, and moreover, that they are stored as ‘long words’, with no internal structure (see also Swinney & Cutler

1979). Another illustration of the storage method proposed in (14i) is the Configuration Hypothesis of Cacciari & Tabossi (1988), according to which idioms are stored with other types of memorized strings, like poems and song lyrics. In contrast with the Separate List Model, Cacciari & Tabossi (1988) suggest that idioms are not stored as ‘long words’ with no internal structure, but as configurations of lexical items, whose idiomatic meaning is built compositionally (see also Cacciari & Glucksberg 1991; Gibbs et al. 1989).

Let us now turn to examine the alternative to independent storage, namely, the option (14ii) – sub-entry storage. As it is illustrated in Horvath & Siloni (2009, 2012), this option could have three possible instantiations. This is illustrated below using the English idiom *pull strings* (‘to secretly use one’s connections in order to get something or help someone’):

15. (i) Head-based storage: the idiom is stored under the lexical entry of the idiom’s lexical head.

Thus, *pull strings* will be stored under *pull*.

(ii) Dependent-based storage: the idiom is stored under the lexical entry of the dependent(s) of the lexical head of the idiom, that is, its complement(s) and/or fixed modifiers/adjuncts.

In our case, *pull strings* will be stored under *strings*.

(iii) Multiple storage (see Everaert 2010; Harley and Noyer 1999): the idiom is stored both under the lexical entry of its head and under the lexical entry(ies) of its dependent(s).

Thus, *pull strings* will be stored under both *pull* and *strings*.

It should be noted already at this point that the latter, namely, multiple storage (iii), is the least-economical method, entailing massive double-listing which would burden the mental lexicon (Jackendoff 1997). This point becomes even clearer once we return to the aforementioned distinction between decomposable (e.g. *pull strings*) and non-decomposable idioms (e.g. *kick the bucket*). As noticed in Horvath & Siloni (2012), if idioms are listed under all their lexical items as suggested under (15iii), the question arises as to the listing of non-decomposable idioms. Under

multiple-storage it is quite unclear how the idiomatic meaning of *kick the bucket*, for example, should be stored. Either it will have to be specified that *kick* means ‘die’ when it appears with *the bucket*, and crucially, that *the bucket* has no meaning of its own when it appears with *kick*.

Alternatively, it could be that the idiom itself is listed with its idiomatic meaning under both lexical items, *kick* and *the bucket*, which would mean that the same idiom appears twice in the mental lexicon. Clearly, both solutions seem equally unappealing. While this in itself does not eradicate multiple listing as a possible storage method, it renders it as the least favorable among the three options, all other things being equal.

The TSS model of Horvath & Siloni distinguishes between the storage method of clausal and phrasal idioms. Specifically, it suggests that phrasal idioms are stored under their lexical heads (i.e. (15i)), while clausal idioms are stored on a separate list (i.e. (14i)). While the model is presented extensively in section 3.2, it is important to note here that in contrast with multiple listing, phrasal idioms of either kind (decomposable and non-decomposable) are suggested to be listed solely under the lexical entry of their heading predicate. Thus, *kick the bucket* will be listed solely under *kick*, without burdening the mental lexicon with massive double-listing.

The theoretical and empirical arguments supporting this distinction will be provided in subsection 1.2.4, and elaborated on in chapters 3, 4 and 5. Prior to the presentation of the TSS model, it is necessary to examine the connection between the storage of idioms and the organization of the mental lexicon, by looking more carefully at the distribution of phrasal idioms (i.e. idioms headed by a lexical category) across the different diatheses.

1.2.3 Idiom Distribution

The following question is raised in Horvath & Siloni (2009, 2012) in order to learn both about the storage of idiomatic expressions and about the internal architecture of the mental lexicon:

16. How are idiomatic expressions distributed across the verbal diatheses (i.e. voices)?

This question is empirically examined from two perspectives. Diathesis-wise, the question is whether idiomatic expressions are distributed randomly over the different diatheses (e.g. transitive, unaccusative, passive), or, whether their distribution is systematic, with specific diatheses lacking specific types of idioms. Idiom-wise, the question is whether an existing idiom, used in a specific diathesis of its main verb (e.g. *spill the beans* is used in the transitive form of *spill*), would preserve its idiomatic meaning in other diatheses as well – or, alternatively, will not be shared across diatheses (i.e. will be uniquely available with a particular voice).

In order to see how this question is connected to the modus of idiom storage, let us examine the answers provided by the two storage methods suggested above, namely, (14i) independent storage and (15) sub-entry storage. Let me start with the latter.

Under sub-entry storage, idioms are stored under one (or more) of their subparts. Recall that this proposal had three possible instantiations: head-based (15i), dependent-based (15ii) and multiple storage (15iii). I examine each in turn with respect to the research question stated in (15), starting with head-based storage.

Head-based storage: Predictions

If idioms are stored with the lexical entry of their heading predicate (e.g. *pull strings* is stored with the lexical entry of *pull*), there are two different predictions regarding idiom distribution across the verbal diatheses, depending on whether the verb is stored as a root (e.g., Borer 2005; Marantz 1997; McGinnis 2002; Pylkkänen 2002; Ramchand 2006) or as a derived word (e.g., Everaert 1990; Jackendoff 1997; Reinhart 2000, 2002). More precisely, the predictions depend on whether diathesis specification is marked post-lexically or encoded already in the lexicon:

- A. Root-based lexicon: if the lexicon consists of roots (i.e. contains no derived predicates),

and if a certain realization of a given root participates in an idiom, we would a priori expect that *all* different realizations (i.e. diatheses) of the same root would share the idiomatic meaning. This is so because such a model does not distinguish between the different diatheses in the lexicon, where idioms are stored. Hence, given that an idiom is stored under the common root, it is predicted to surface with all its realizations. In other words, we wouldn't expect to find idioms which are uniquely available in a specific diathesis of their main verb.

B. Word-based lexicon: In contrast, the word-based model of the lexicon, permitting the listing of derived predicates, would allow some idioms to be available *uniquely* with a specific diathesis – crucially, only if the particular form/predicate is an independent lexical entry.⁵ This is so because such a model assumes that two diatheses of the same concept can in principle be listed as distinct predicates in the lexicon (having been derived by a lexical operation). Hence, there should be no a priori reason why an idiom existing with one predicate should always be shared by the corresponding other predicate – though of course, nothing excludes that some idioms will be shared. The important point is that word-based lexicon would allow for the existence of idioms *unique* to a particular diathesis, while root-based lexicon would not.

Dependent-based Storage: Predictions

Under the storage method outlined in (15ii), the prediction is remarkably different: if idioms are stored under one of their sub-parts, but crucially, not solely under their lexical head, we would expect to find idioms rigidly available only in one diathesis – the one they are listed in. We would also expect to find no systematic connection between diathesis type and idiom availability, as

⁵ It should be noted that the precise morpho-phonological representation of the lexical items is not directly relevant to the research at hand. Thus, option (B) refers to the case in which lexical entries are formed prior to the syntactic derivation. Whether they are lexically represented as full words, or as separate root+template (in languages like Hebrew) (as suggested in Frost et al. 2000, for example) is immaterial for my purposes, since both options predict the existence of unique idioms in specific diathesis. Thus, I do not distinguish between the two here and refer to both as 'word'-based approaches.

diathesis information is unavailable to units under which the idiom is proposed to be stored (i.e. complement or adjunct of the lexical verb).

Multiple Storage: Predictions

Under multiple storage (15iii), the idioms are proposed to be stored both under the lexical head and its dependents. Therefore, on a par with head-based storage hypothesis, the predictions of this storage model depend on whether the lexicon consists of roots or derived words. If diathesis information is marked post-lexically (i.e. the lexicon is root-based), we would expect that idioms existing with a specific diathesis of their main verb will be available with all other diatheses as well, due to their storage under the common root. Alternatively, if diathesis information is available in the lexicon (i.e. the lexicon is word-based), we would expect to find idioms uniquely available with a particular diathesis of their lexical head, and unavailable with other diatheses. Thus, multiple storage method mirrors the predictions of head-based storage method. Recall, however, our discussion in section 1.2.2, where we saw that multiple storage was less economical than head-based storage, due to the double listing of idiomatic expressions both under the predicate and its dependent(s). Therefore, if empirical evidence is found to support the predictions outlined above, multiple storage would be the least favorable option among the two.

Independent Storage: Predictions

Let us now return to the alternative storage method in (14i), that is, independent storage. Recall that under this alternative, idioms are suggested to be stored on an independent list altogether, with no association to the entries of the lexical items comprising them. If so, we would expect to find no systematic connection between idiom availability and the diathesis of its main verb. On a par with the preceding two alternatives, this storage methods predicts the distribution of idioms to be

scattered across the different diatheses, and in general, each existing idiom to be rigidly available only in one voice – the one it is listed with.

The above predictions are put forward and tested empirically in a seminal study by Horvath & Siloni (2009), which examined the distribution of idioms across different diatheses in a corpus study of Hebrew. Let me move on to present its findings, and to outline the major claims of the TSS model they developed in further related work, pertaining to storage of phrasal and clausal idioms.

1.2.4 Type Sensitive Storage

The study of Horvath & Siloni (2009) compared the distribution of phrasal idioms in the following four diatheses: transitives, unaccusatives, verbal and adjectival passives.⁶ Specifically, it examined the existence of *unique idioms* in each, where the term ‘unique idiom’ refers to idioms in the unaccusative/passive voice which do not share their idiomatic meaning with their transitive alternates, or, alternatively, to idioms in the transitive voice which do not share their idiomatic meaning with their unaccusative alternates. Two unique idioms are illustrated in (17)-(18): both expressions in (a) are headed by unaccusative verbs; once the predicate is replaced with its transitive counterpart, as in (b), the idiomatic meaning becomes unavailable.

17. a. *nafal al oznayim arelot* (Hebrew)
 fell on ears not+circumcised
 Idiomatic: ‘Fell on deaf ears’

b. *#hipil et x al oznayim arelot*
 fell.trans acc x on ears not+circumcised
 Hypothetical: ‘Someone made x fall on deaf ears’ (non-existing)

18. a. *xazar al arba*
 returned on four
 Idiomatic: ‘Was defeated’

b. **hixzir et x al arba*
 returned.trans. acc x on four
 Hypothetical: ‘Someone defeated x’ (non-existing)

⁶ The study is presented in more detail in chapter 3 of this dissertation. My goal here is to acquaint the reader with its main findings and conclusions.

The corpus of Horvath & Siloni (2009) consisted of seven idiom dictionaries, complemented by online searches. It was found that unique idioms were completely absent from the verbal passive voice, in sharp contrast with other voices. The results are presented in (19):

19. *Table 1*

Unique Verbal Passive Idioms	Unique Adjectival Passive Idioms	Unique Unaccusative Idioms	Unique Transitive Idioms
0/60	13/60	21/60	23/60

The table above shows that the number of unique idioms Horvath & Siloni (2009) found with verbal passives – that is, idioms existing only with verbal passives – was significantly different from the number of unique idioms found with all other diatheses. Crucially, this difference was statistically significant across the board: comparing verbal and adjectival passives ($\chi^2 = 12.423$, $p < 0.001$), comparing verbal passives and unaccusative verbs ($\chi^2 = 23.088$, $p < .0001$); finally, comparing verbal passives with transitive predicates ($\chi^2 = 26.033$, $p < .0001$). The difference between unique idioms headed by adjectival passives, unaccusative verbs and transitive verbs was insignificant ($\chi^2(2) = 4.313$, $p = 0.116$).

What can be learnt from these findings? First, they clearly support the suggestion that idioms are stored as part of linguistic knowledge, and not, for example, world knowledge, as idiom availability is shown to be affected by linguistic factors. Second, they support the head-based storage method (i.e. (15i)), according to which idioms are stored with the entry of their verbal or adjectival head. Third, they support the word-based model of the mental lexicon (see e.g., Everaert 1990; Jackendoff 1997; Reinhart 2000, 2002). Let us see why. If idioms are stored within the lexical entry of their head, and if, crucially, an unaccusative verb (for example) has its own lexical entry, separate from that of a transitive verb (e.g., Chierchia 1989; Horvath & Siloni 2008; Levin & Rappaport-Hovav 1995), the existence of unique idioms is hardly surprising: nothing rules out the possibility that an

idiom will be stored with only one realization of the relevant concept. The same logic can be applied to explain the existence of unique transitive idioms.

How to account for the absence of unique verbal passive idioms, compared with the existence of unique adjectival passive idioms? It has been independently proposed, and reaffirmed in recent linguistic literature, that verbal passives are formed from the transitive predicates post-lexically (i.e. in the syntax), in contrast to the lexically derived adjectival passives (see, *inter alia*, Baker, Johnson & Roberts 1989; Collins 2005; Horvath & Siloni 2008). Therefore, the absence of unique idioms with verbal passives is readily accounted for: passive verbs do not exist at all in the lexicon, hence they cannot head unique idioms. In contrast, adjectival passives are listed as separate entries, hence can head unique idioms, namely idioms available only with the adjectival passive realization of the lexical concept.

Proponents of the root-based models of the lexicon (e.g. Borer 2005; Marantz 1997; McGinnis 2002; Pylkkänen 2002; Ramchand 2006) would need to explain why unique idioms exist in some diatheses (i.e. unaccusative, adjectival passives, and transitive verbs) but not in others (i.e. verbal passives). If the lexicon consists of roots and diathesis information is only available post-lexically, it is hard to see how the findings on idiom distribution can be explained under this view.

Similarly, as the findings show a systematic connection between the predicates heading idioms and their distribution across the different diatheses, it is hard to see how the findings can be explained under other models of idiom storage. In other words, if idioms are stored on a separate list (i.e. (14i)) or under one or more of their dependent(s) (i.e. (15ii, 15iii)), it is hard to see how the connection between idiom distribution and the type of their heading predicate can be explained. Based on their findings, Horvath & Siloni (2009) advance the Head-Based Storage Hypothesis, defined in (20), as the storage method of phrasal idioms:

20. Head-Based Storage Hypothesis

Verb phrase idioms are stored as subentries of their matrix predicate, the lexical verb.

(Horvath & Siloni 2009: p. 16)

Chapter 3 of this dissertation elaborates on the methodology and findings of Horvath & Siloni (2009), in addition to presenting in more detail the suggested head-based storage method.

Chapter 4 of this dissertation presents the results of a massive corpus study I conducted on Russian phrasal idioms, which provide extensive empirical support for the head-based storage of phrasal idioms in another language, namely Russian.

Let us now turn to examine the storage of clausal idioms, that is, idioms identified by Horvath & Siloni (2012) as containing clausal functional material like negation, modality and fixed mood (precise definition is provided in chapter 5). A few English examples are presented below:

21. *cry me a river!*

22. *can't see the forest for the trees*

The question arises whether clausal idioms are stored similarly to phrasal idioms, that is, as subentries of their matrix predicate. Horvath & Siloni (2012) argue against this direction, for the following reasons: first, if clausal idioms are a projection of their functional heads, it is unappealing to suggest that they are stored as their subentries, due to the independently known differences between functional and lexical material. Specifically, functional categories are known to be a closed class of entries, without descriptive content, which assign no thematic relation to their complements. In contrast, lexical categories belong to an open class of items, with thematic relations central to their meaning and with novel entries being added frequently (Abney 1987; Emonds 2000). Since idiomatic expressions, in their very essence, contain descriptive content on a par with lexical items, it would be unreasonable to store them under functional heads – entries devoid of descriptive

content. Further, since new idioms are added to speakers' lexicons throughout their lives, it would be unreasonable to store them in a place reserved for a few fixed functional categories.

An alternative instantiation of the head-based storage method would suggest that clausal idioms, on a par with phrasal idioms, are stored as subentries of their lexical predicates. Horvath & Siloni (2012) argue against this direction as well, on theoretical as well as empirical grounds.

Theoretically, it is unappealing to suggest that structures containing functional material are stored under (hierarchically lower) lexical heads. Empirically, there exist clausal idioms which contain no lexical predicate to function as their head. Observe the following Hebrew example:

23. *kuli ozen*
all+of+me ear
Literal: 'I am all ear'
Idiomatic: 'I'm listening attentively'

As it will be explained in more detail in chapter 5, this is a clausal idiom as its tense properties are fixed. If clausal idioms were stored on a par with phrasal idioms, as subentries of their lexical heads, storage of nominal clausal idioms like (23) would be hard to accommodate. Based on these theoretical and empirical reasons, Horvath & Siloni (2012) suggest that clausal idioms are stored independently from their subparts, on a separate list. This hypothesis is presented in (24) below.

24. Independent Storage Hypothesis

An idiom that is not headed by a lexical category gets stored as a single unit listed as an independent lexical entry

(Horvath & Siloni 2012: (9))

As it is reflected in its name, the Type-Sensitive Storage (TSS) model suggests that phrasal and clausal idioms differ in their manner of storage. Specifically, phrasal idioms are claimed to be stored as subentries of their lexical heads (i.e. Head-Based Storage Hypothesis in (20)), while clausal idioms are hypothesized to be stored independently (i.e. Independent Storage Hypothesis in (24)).

This distinction gives rise to a few systematic predictions regarding the behavior and distribution of

both types of idioms, which will be presented and examined in chapters 4 and 5. Let me conclude this introductory chapter with an outline of the goals pursued in this dissertation.

1.3 Research Questions and Goals

This dissertation pursues the following three objectives:

- (i) To examine the L1 acquisition of idiomatic expressions in Hebrew
- (ii) Idiom storage: to test the predictions of the TSS model in Russian and Hebrew
- (iii) Relying on (ii), to obtain a better grasp of the internal organization of the lexicon

Let me elaborate on each in turn. The first part strives to understand when, at what stage in acquisition, the notion ‘idiom’ emerges. In other words, it strives to understand at what stage children start comprehending and producing idiomatic expressions on a par with adults.

Having determined the age at which children behave similarly to adults with respect to idiom usage and comprehension, the second goal of this dissertation is to uncover the manner in which different idiomatic expressions are stored in the mental lexicon. Are idioms part of linguistic knowledge, or a more general type of world-knowledge? If they are part of linguistic knowledge, how are they stored in the lexicon – under one (or more) of their subparts or on a separate list altogether? Extensive corpus studies from both Hebrew and Russian are designed to answer these questions in light of the TSS model.

These questions lead directly to the third goal of this dissertation, namely, to answer questions regarding the internal organization of the mental lexicon. How much information is encoded? What kinds of units compose the lexicon – bare roots or whole, derived, words?

As it was shown in the beginning of this chapter, idioms have fascinated multidisciplinary researchers from early antiquity to the present days. This work is unique in that it strives both to shed light on the different types and instantiations of idioms cross-linguistically, together with their

course of acquisition, and to use this knowledge in order to gain insight into the architecture of the mental lexicon. Thus, idioms are at once the tool of the research, and its subject matter. We will start the journey into idiomatic expressions with the first objective of this dissertation, namely, examining the role they play in the lexicons of young speakers acquiring Hebrew.

2. Acquisition

The goal of this chapter is to explore the L1 acquisition of idiomatic expressions in Hebrew. At its centre are two innovative experimental studies conducted with third-graders, which examine the comprehension and completion of various types of idioms. Notably, both experiments are part of a larger project devoted to the study of idiom acquisition in Hebrew, which included a series of experiments conducted with first and second graders under the supervision of Julia Horvath and Tal Siloni.⁷ As it will become clear in the expository part of this chapter (section 2.1), the research of idiom acquisition in Hebrew is, metaphorically speaking, an unplowed land. Any data collected on the acquisition of idioms, then, is a significant contribution to this emerging topic of research. Furthermore, examining how children understand idioms in various stages in acquisition, apart from being interesting for its own sake, can lead us to a better understanding of their storage method(s) in the adult lexicon. Two major questions are pursued in the experimental part of this dissertation:

A. When (i.e. at what age/stage in acquisition) do children become aware of the very existence of idioms? Research of this rather basic question, apart from being interesting for its own sake, will help us to establish the age from which we can ask other questions related to idiom acquisition – ‘plowing’, so to speak, this field.

B. What is the course of acquisition of various types of idioms? In other words, is there any correlation between the different types of idiomatic expressions (e.g. full, decomposable, transparent etc; recall the exposition in section 1.2.1) and their order of acquisition? If so, which idioms are ‘easier’ for children, being acquired earlier, and which are more difficult? Another aspect of this question is the relation between the two types of tasks that were used in this study, namely, multiple

⁷ All experiments were designed in the frame of BSF Grant No. 2009269, PIs Prof. Tal Siloni, Prof. Julia Horvath and Prof. Ken Wexler.

choice and sentence completion. We were interested to learn whether there will be any difference between the two tasks, and if so, which will be easier and which will be more difficult.

This chapter is structured as follows. Section 2.1 presents the historical background, discussing the major questions raised with respect to idiom acquisition from the seminal work of Jean Piaget in the early 70's to the present day research. In section 2.2, I present the first experiment conducted in the framework of this dissertation, which tested children's comprehension of familiar idiomatic expressions in Hebrew. In section 2.3, I present the second experiment conducted in the framework of this dissertation, which tested children's ability to recall familiar idiomatic expressions in a completion task. Section 2.4 summarizes this chapter, suggesting additional questions for future research.

2.1 Historical Background

The goal of this section is to acquaint the reader with the major questions raised with respect to idiom acquisition in the past, and to present some of the more recent answers given to those questions in current experimental research. In addition to providing the general background for subsequent discussion, this presentation will allow me to delineate the experimental work conducted in this dissertation, and to highlight its uniqueness and novelty. As discussion of child development in practically any field cannot be complete without mentioning the work of Jean Piaget, allow me to start with a brief presentation of his model of child development and its predictions with respect to idiom acquisition. It should be noted already now that the model does not distinguish between different types of non-literal expressions – that is, between novel metaphors, similes and idioms – treating them uniformly under the broad name of 'figurative language'. I return to this point further below.

The Piagetian model of child cognitive development (Piaget 1972) recognizes four stages in the cognitive development of children: (i) *sensori-motor* (from birth to age 2), (ii) *pre-operations* (age

2-7), (iii) *concrete operations* (ages 7-11), and finally, (iv) *formal operations* (ages 11-16). These stages are believed to be universal, with their order being strictly fixed – each stage providing the necessary springboard for the following stage. Below is a short presentation of each stage:

25. **Piagetian model: 4 stages**

(i) *sensori-motor* (0-2): at the centre of this very initial stage in child development is the notion ('schema') of movement and object manipulation. Through experience with movement and objects around her, the child begins to understand the notions of causality and time/space. This stage is characterized as 'ego-centric', as babies lack the awareness to others people having differing needs/wants (see also Fodor 1994 for an extensive discussion).

(ii) *pre-operations* (2-7): emergence of rudimentary logical processes, in addition to a vast expansion of child's vocabulary. A gradual abandoning of the ego-centric world view takes place during this stage, as children come to realize that others can be the centre of attention in a given situation. Another important characteristic of this stage is 'symbolism' – children start realizing that a thing can stand for something else, or, in other words, that 'what you see' is not always 'what you get'. Piaget notes that it is no coincidence that this is also the stage in which children start being aware of non-literal language.

(iii) *concrete operations* (7-11): the thought processes become more logical, more 'adult-like'. If before children's perception of objects around them was largely dependent on their presence in the actual physical world, this is the stage where they abandon the need to see an actual object in order to think or talk about it. They also begin to develop the notion of reversibility, that is, the idea that even if things are somewhat changed, they still belong to the same categories (e.g. a cat whose fur is pink is still a cat, and not a different type of animal). Finally, this is the stage in which children begin to imagine alternative realities and to use 'what if' scenarios both in their thought and speech.

(iv) *formal operations* (11-16): at this final stage of development, adolescents reach the logically organized system of adult intelligence, characterized by the ability to abstract. The notion of ‘alternative realities’ comes to be central to their thought and action. This is also the stage where adolescents start evaluating the logical validity of their or others’ propositions without necessarily referring to real-world circumstances.

According to Piaget’s developmental stages presented above, then, very young children may be able to *perceive* figurative language in conversations, but they are still expected to lack the ability to comprehend it until they reach the pre-operational stage, around eight years old. This is because awareness of idiomatic language requires the child to merely be aware of the gap between ‘what is said’ and ‘what is meant’, in contrast with active usage of such expressions. Thus, children younger than eight are expected to be familiar with some metaphorical expressions, but their ability to use them spontaneously and creatively is predicted to be delayed (at least) until they reach the age of eight years old. Following the results of an experiment examining children’s comprehension of proverbs, Piaget (1974) suggests the following stages specific to the development of figurative language:

26. Piagetian model: figurative language

- (i) ability to recognize a few specific metaphors (age 5-7)
- (ii) ability to comprehend and paraphrase selected metaphors (ages 6-8)
- (iii) ability to explain what lies at the heart of various metaphors and to extend their usage to novel situations (ages 9-11)

Notably, Piaget recognizes the special nature of figurative language, which continues to develop in adolescents and even adults. That is, his model recognizes that even at the presumably final stage of ‘formal operations’ (ages 11-16), one’s ability to fully understand metaphorical language can improve, depending on one’s exposure and actual usage of this type of language. One’s ability to

use figurative language is strongly tied to one's erudition and creative use of language in general and is therefore subject to change throughout his or her lifetime.

Let me elaborate briefly on the aforementioned experiment, conducted by Piaget in 1974: the experiment tested the ability of children aged eight to eleven to explain the relation between the literal and the figurative meaning of a few chosen proverbs in English. Although all the children understood that the proverbs encoded an additional layer of meaning, only the oldest kids could successfully explain the relation between the two types of meaning (i.e. literal and non-literal). This distinction between the ability to recognize the double nature of figurative language, which seems to be available from an early age, and the ability to use this double nature spontaneously and/or creatively, which seems to be delayed, is supported by additional studies from the 70's (see, for instance, Billow 1975; Gardner 1974; Pollio & Pollio 1977; Winner, Rosenstiel & Gardner 1976). As mentioned at the beginning of this presentation, though, Piaget's study treated non-literal language as one body of closely related and very similar phenomena, among which are metaphors, similes, proverbs and idiomatic expressions. Other studies mentioned above followed this direction as well, examining the acquisition of figurative language in general. However, recall our discussion in chapter 1, where we saw the differences between the various types of figurative language. Recall, for instance, that proverbs like *absence makes the heart grow fonder* are fixed expressions which lack a figurative component to their meaning. Or, recall that metaphors like *you are my rainbow!* are clearly figurative, but lack the conventional component to their meaning. Idioms are unique in the combination of both conventionality and figuration – recall that both properties form the necessary and sufficient conditions for an expression to be considered idiomatic (as it was stated in their definition in section 1.2.1). Given this unique combination of both properties, it is reasonable to doubt the relevance of experiments which test children's acquisition of proverbs or novel metaphors to the research of idiom acquisition. While conclusions from studies like this can certainly suggest a

direction for a more specific exploration, they cannot be readily generalized to the acquisition of idioms.

With this in mind, let me now turn to discuss studies focusing on the acquisition of idioms. Recent years have seen a plethora of researches on this topic, utilizing different experimental methods. It is a general consensus that while children younger than 6 can sometimes understand a few selected idioms, their performance in both comprehension and production tasks is quite poor as they tend to interpret idiomatic expressions literally (see, among others, Abkarian et al. 1992; Ackerman 1982; Cain et al. 2005, 2009; Gibbs 1987, 1991; Levorato & Cacciari 1992; 1995; Nippold & Martin 1989; Nippold & Rudzinsky 1993). Furthermore, there is a general consensus that transparent idioms like *land on one's feet* 'make a quick recovery', that is, idioms whose idiomatic meaning can be inferred even without supporting context, are acquired earlier than opaque idioms like *spill the beans* – the idiomatic meaning of which is harder to compute without contextual information (see, among others, Gibbs 1987, 1991; Levorato & Cacciari 1992, 1995; Nippold & Rudzinsky 1993; Nippold et al. 1996, 2001). Additionally, there is a general agreement that contextual support is crucial for idiom comprehension – idioms presented in supportive contexts are comprehended significantly better than idioms presented in isolation (Ackerman 1982; Cacciari & Levorato 1989; Gibbs 1987, 1991; Laval 2003; Nippold & Rudzinsky 1993). Another point of general consensus in the literature is the relation between the knowledge of idioms and the more general reading comprehension skills: Children who perform better on reading comprehension tests exhibiting better idiom knowledge and vice versa – poor comprehenders exhibiting poor idiom knowledge (Cain et al. 2005; Levorato, Nesi, & Cacciari, 2004; Nippold et al. 2001; Titone & Connine 1994, 1999). Further, it is well established that production of idioms is significantly more difficult than idiom comprehension (Ackerman 1982; Clark & Hecht 1983; Levorato & Cacciari 1995). Finally, it is generally noticed

that children approach adult-like level of competence with idioms between 8 and 9 years old (e.g., Cain et al. 2005; Levorato, Nesi & Cacciari 2004).

Apart from these general points of agreement, anticipated already by Jean Piaget, specific details of idiom acquisition remain controversial. For example, it is often noted that children (and adults) have less difficulty comprehending familiar idioms compared with their less familiar counterparts (Nippold & Rudzinski, 1993; Nippold & Taylor, 1995, 2002; Schweigert, 1986), where ‘familiar’ refers to the idiom’s frequency in the adult language (Nippold & Taylor 1995). However, it is also found that both adults and children tend to give higher familiarity ratings to transparent idioms than to opaque idioms (Nippold & Rudzinsky 1993; Nippold & Taylor 2002). This link between the two properties, namely, frequency and transparency, confounds the general picture of idiom acquisition. Similarly, findings referred to above which report the ease of comprehending transparent idioms can equally be interpreted to report the ease of comprehending decomposable idioms, that is, idioms whose idiomatic meaning can be distributed onto their subparts – as the two properties are often confounded in the experimental design (see, in addition to references above, also Gibbs 1991; Gibbs & Nayak 1989; Huber-Okraïneç, 2002).

Another point of controversy is the nature and extent of contextual support. As mentioned above, it is generally agreed that children benefit from contextual support with all types of idioms.

Nevertheless, several studies suggest that this is relevant mostly for the younger children.

Specifically, Gibbs (1991) and Levorato & Cacciari (1999) suggest that young children (aged 5 to 7) rely more on contextual information in their interpretation of unfamiliar idioms, compared with older children (aged 7-9). In addition, some studies suggest that not all types of idioms benefit equally from the presence of context. Specifically, Gibbs (1991) and Levorato & Cacciari (1999) propose that it is opaque idioms that can benefit from the presence of supporting context, with the comprehension of transparent idioms being unaffected by the presence or absence of contextual

information. As mentioned above, other studies agree with the limited nature of the conclusions regarding contextual support, but disagree on the precise details – for example, Huber-Okrainec (2002) suggests that contextual support is relevant only for non-decomposable idioms, with decomposable idioms receiving little help from contextual information.

Another, more general, question which remains open is the choice of task, namely, which task is best suited to assess children's knowledge of idioms? Is it multiple choice (used in e.g., Cain et al. 2009), idiom explanation (e.g. Cain et al. 2005), idiom paraphrase (e.g., Levorato & Cacciari 1999) or sentence completion (e.g. Bernicot et al. 2007)? Or, alternatively, perhaps each task tacks a different type of competence, and it is only through their joint examination that we can obtain a comprehensive picture of L1 acquisition of idioms? (See Levorato & Cacciari 1999 for an elaborate discussion of the way the choice of task influences the results.)

Finally, a presentation of theoretical background cannot be complete without discussing two influential proposals regarding the manner of idiom acquisition, namely, (i) *Acquisition via Exposure Hypothesis* (Ezell & Goldstein 1991; Lodge & Leach 1995; Nippold & Martin 1989) and (ii) *Global Elaboration Hypothesis* (Levorato 1993; Levorato & Cacciari 1992; 1995; Levorato et al. 2004). According to the former, children acquire idioms in a rote manner simply by being exposed to them in the language spoken with and around them. Therefore, idiom frequency should play a central role in their acquisition, with frequent idioms being acquired earlier than less frequent idioms. As mentioned above, empirical data are quite confounded: some studies report findings supporting this direction (e.g., Nippold & Rudzinski, 1993; Nippold & Taylor, 1995, 2002; Schweigert 1986), while others report lack of connection between the rate and ease of acquisition and the idiom's frequency (e.g., Gibbs 1991; Levorato & Cacciari 1992).

The second proposal, namely, the Global Elaboration Hypothesis, posits that acquisition of idioms is not qualitatively different from acquisition of any other type of language, be it figurative or literal.

The same cognitive mechanisms and strategies are suggested to be at work. Specifically, this hypothesis puts forward the idea that the ability to comprehend idiomatic expressions stems from the (more general) ability to analyze large portions of text or discourse in search of global coherence. Based on studies which show a correlation between the idiom's analyzability and its ease of comprehension (e.g. Gibbs 1987, 1991), Levorato & Cacciari (1995) propose that this general cognitive competence comprises four different abilities, as elaborated below:

27. Levorato & Cacciari: figurative competence

- (a) Ability to understand dominant, peripheral and additional meanings of words and their interrelations within their broader semantic domain
- (b) Ability to transcend 'purely literal-referential strategy'
- (c) Ability to make use of contextual information in order to integrate the given string of words into the larger coherent whole
- (d) Ability to transcend the expectation that 'what is said' is 'what is meant'

(Levorato & Cacciari 1995: pp. 263-264, slightly modified)

While these different abilities can sometimes develop simultaneously, as noted by Karmiloff-Smith (1990), the above loosely corresponds to four developmental stages in the acquisition of idioms. Taken together findings that show a correlation between a string's analyzability and its ease of comprehension (e.g. Gibbs 1987, 1991), and findings that show that contextual information aids the comprehension of unfamiliar idioms (e.g. Ackerman 1982; Cacciari & Levorato 1989; Gibbs 1991), the following is an elaboration of the proposed four phases in idiom acquisition:

28. Levorato & Cacciari: four phases in idiom acquisition

(i) Phase 1: *piece-by-piece literal strategy*. In this early, initial stage, children are expected to be able to conduct only a very shallow and simplistic analysis of the idiomatic strings, resulting in their exclusively literal interpretations.

(ii) Phase 2: *awareness and integration of contextual information*. In this more advanced stage, children are expected to be able to use contextual information to obtain clues as to the figurative meaning of idiomatic expressions, though largely relying on their world knowledge at this point.

(iii) Phase 3: *awareness and integration of communicational intention*. Similarly to the previous stage, children are able to suspend a literal interpretation – this time, though, they become sensitive to the speaker's intentions, permitting them to use this information to interpret unfamiliar idiomatic expressions and/or refine the precise meanings of familiar idioms.

(iv) Phase 4: *production*. At this last stage, children are able to produce idiomatic expressions, using figurative language creatively and spontaneously. As shown in the experimental study of Levorato & Cacciari, idiom comprehension indeed precedes idiom production, which proves difficult even for 11 year-old children.

Let me summarize the presentation up to this point. Starting with Piaget, we have seen the major questions raised with respect to the L1 acquisition of figurative language in general, and L1 acquisition of idioms, in particular. We have seen the different factors influencing acquisition, such as contextual support, choice of task and specific types of idiomatic expressions – though the specific details remain controversial, due to the often confounding nature of these factors, and as a result, confounding empirical findings.

Notably, the research mentioned in the references above has examined only a handful of languages, specifically, English (e.g., Cain et al. 2009), Italian (e.g., Levorato & Cacciari 1995) and French (e.g., Bernicot et al. 2007). As mentioned in the beginning of this chapter, the study of idiom acquisition in Hebrew is an unploughed land. To the best of my knowledge, the only systematic study examining acquisition of figurative expressions is the work of Berman & Ravid (2010), which tested comprehension and recall of Hebrew proverbs (as defined by Berman & Ravid; I return to this point further below) in Israeli schoolchildren. Let me elaborate on its design and findings.

The study of Berman and Ravid tested the ‘figurative competence’ of children in two age groups (4th grade, ages 9-10, and 8th grade, ages 13-14), with three types of populations: (a) typically developing children from mid-high social economic background, (b) typically developing children from low social economic background, and (c) language impaired children from high economic background. A total number of 250 children participated in the study, which involved two tasks: (i) comprehension of pseudo-proverbs in Hebrew, where ‘pseudo-proverbs’ refers to proverbs non-existing in Hebrew, being translated from existing English proverbs, and (ii) recall of existing Hebrew proverbs, taken mainly from classical religious texts. The former task was presented in two conditions: with and without contextual support.

In both cases, namely, in both invented and real proverbs, children had to choose the most suitable answer in a multiple choice task. In the former case, with pseudo-proverbs, there were three distractors presented in a random order, ranging from the most abstract to the least abstract (i.e. literal). Thus, the child had to choose one option out of four possibilities. For example, in the case of a proverb like *behind every black cloud hides the sun* (adapted from the English *every cloud has a silver lining*), the correct response was ‘you can find something good in everything bad’. The three remaining answers were distractors ranging from the most abstract (i.e. ‘there are people that see only blackness’) to the less abstract (i.e. ‘wintry weather is not particularly well-liked’) to the least

abstract (i.e. ‘not every black cloud hides the sun’). With real proverbs, children also had to choose one of four possible answers, provided as before, in a randomized order. The three distractors in this case were a phonologically similar word, a semantically similar word, and pragmatically feasible word. For example, for the proverb *im eyn kemax, eyn ___*, ‘no flour, no ___’, the correct answer was *torah* ‘lore’; the phonologically similar distractor was *shira* ‘poetry’; the semantically similar distractor was *xoxma* ‘wisdom’; finally, a pragmatically suitable distractor was *uga* ‘cake’.

The findings were as follows: first, it was found that in general, typically developing children of higher socio-economic backgrounds performed significantly better than typically developing children from lower socio-economic backgrounds in all conditions. Additionally, it was found that children could understand novel idiomatic expressions quite well, with typically developing 4th graders averaging 70% correct responses and with typically developing 8th graders averaging 90% of correct responses. The developmental curve was found to be similar with language impaired children as well, though the numbers were significantly lower: language impaired 4th graders averaged around 50% correct responses, and 8th graders – 80% of correct responses. Thus, the ability to interpret unfamiliar expressions, both with and without context, is found to be sufficiently developed in the fourth grade, allowing children to reason their way to the relevant figurative meaning. Contextual support proved to be a significant aid for both age groups, though noticeably more relevant for the younger children. Finally, a significant difference was found between the comprehension of novel proverbs and the recollection of existing ones: the former was significantly easier for all children. In other words, comprehension of unfamiliar proverbs, even without contextual information, was found to be easier than recollection of existing proverbs.

As it was mentioned above, to the best of my knowledge, this is the sole systematic study examining the figurative development of children acquiring Hebrew. Despite of its comprehensiveness, with 250 children participating in the study, along with the systematic examination of variables like age

and socio-economic status, the findings from this study are only marginally relevant for our purposes here, as the definition of ‘proverbs’ used in Berman and Ravid’s study is not parallel to the definition of idioms used in the current study. Specifically, it is unclear what is the empirical array tested in the acquisition study – the few provided examples will get classified as clausal idioms under the TSS model of Horvath & Siloni (2012). Similarly to the points raised above with respect to the work of Piaget, conclusions from this study can certainly suggest a direction for a more specific exploration of idiom acquisition – but they cannot be readily extrapolated onto the acquisition of idioms (as defined precisely in the course of this work). Furthermore, the findings cannot answer the main question of our research, namely, when children start mastering knowledge of idioms. With this in mind, let us turn to examine two novel experimental studies on idiom acquisition in Hebrew conducted in the framework of this dissertation.

2.2 Acquisition of Hebrew Idioms: Multiple-Choice

As it was mentioned in the introduction of this section, my study on third-graders is part of a larger project that involved designing and conducting acquisition experiments under the supervision of Julia Horvath and Tal Siloni. The results of experiments conducted on first and second graders are reported in Fadlon, Horvath, Siloni & Wexler (2012), and presented further below.

2.2.1 Goals and Predictions

A primary goal of all acquisition studies conducted within the framework of the TSS model (under the supervision of Julia Horvath and Tal Siloni) is to arrive at an initial understanding of the development of idiom acquisition in Hebrew. Since very little is known about acquisition of figurative language in Hebrew, and acquisition of idioms in particular, any experimental findings obtained in the course of this study are *prima facie* relevant and beneficial, providing the ‘soil’, so to speak, for future research. In addition to this broad and rather general inquiry, a more specific goal

of these studies was to examine the relation between the syntactic properties of idiomatic expressions and their course of acquisition. The following two questions are at the heart of this research:

- A. Do children possess the notion ‘idiom’ at the relevant age (i.e. 1st/2nd/3rd grade)?
- B. Which types of idioms (e.g. gapped/full, decomposable/non-decomposable), if any, are acquired earlier?

Relying on previous literature on idiom acquisition in languages other than Hebrew, we would expect first and second graders to have difficulty with idiomatic expressions, with third graders approaching adult-like competence (Cain et al. 2005; Levorato, Nesi & Cacciari 2004).

Additionally, we would expect idiom comprehension to be easier than idiom production for all children (see Ackerman 1983; Clark & Hecht 1983; Levorato & Cacciari 1995; as well as Berman & Ravid 2010).

An interesting question arises with respect to the distinction between full and gapped idioms. Recall that ‘gapped’ refers to idioms like the English *drop X a line* ‘send X a letter’, where X represents an empty slot which needs to be filled with a contextually appropriate lexical item. In contrast, ‘full’ refers to idioms like the English *spill the beans* ‘reveal the secret’, with no such slot. It is possible, then, that gapped idioms will be more difficult for children, as their semantics requires an additional calculation to be made, namely, the filling of the missing gap. Alternatively, it could be the other way around – namely, that gapped idioms will be acquired before full idioms, as they encode less lexical information, making it easier to store and/or recall them in comparison with full idioms. The goal of these studies was to examine whether the property full/gapped affected the course of acquisition in a systematic way.

Similarly, a question arises with respect to the distinction between decomposable and non-decomposable idioms. Recall that ‘decomposable’ refers to idioms whose idiomatic meaning can be evenly distributed over their sub-parts (e.g. *spill the beans* ‘reveal the secret’), while ‘non-decomposable’ refers to idioms whose idiomatic meaning cannot be evenly distributed over their sub-parts (e.g. *kick the bucket* ‘die’). It is possible that decomposable idioms will be easier for children, as their meaning is derived compositionally, on a par with ‘regular’ literal sentences. Alternatively, it is possible that non-decomposable idioms will be easier for children, as their idiomatic meaning is best expressed with a single word/concept, rendering their storage and retrieval less demanding than the computation associated with decomposable idioms. Once again, the goal of these studies was to examine whether the distinction between decomposable and non-decomposable is relevant in course of idiom acquisition in Hebrew.

2.2.2 Subjects (3rd graders)

A total of 30 children participated in the first experiment testing the comprehension of idiomatic expressions. The subjects were third-graders, aged 8 to 9;6 (mean age: 8;6), studying at Tel-Nordau school in central Tel-Aviv. Their socio-economic status, as evident from the school’s geographical location, was mid-high. All children were native speakers of Hebrew, with no known language or cognitive impairments.⁸

2.2.3 Materials

All comprehension experiments in the project had the same design, as elaborated below. The materials consisted of 20 phrasal (VP) idioms, ten gapped and ten full. Each idiom contained two

⁸ Prior to testing, children’s parents were acquainted with information about the study, its goals and procedure. In order for children to participate in the experiment, their parents had to sign a consent form – all children included in our study had their parents sign a consent form allowing their participation. This was ensured for all children in all the comprehension and production experiments conducted within this project.

complements: a direct object and an indirect object. They were preceded by short stories, providing the contextual background for their felicitous usage. Since it is often noted in the literature that transparent idioms, especially with supporting contexts, allow children to guess their idiomatic meanings (e.g., Gibbs 1987, 1991; Levorato & Cacciari 1992, 1995; Nippold & Rudzinsky 1993; Nippold et al. 1996, 2001), and since we wanted to know which specific idioms are known to children in each age group, only opaque idioms were used in this study. The items are presented in (29) and (30), and elaborated on further below. Notice that the Hebrew translations, which underlie our decomposable/non-decomposable classification, are presented below together with their glosses and translations to English.

29. Items: full idioms

Idioms	Frequency	Additional Features
<p><i>hixzik et ha-rosh meal ha-mayim</i> held acc the-head above the-water</p> <p>heb: <i>sarad lamrot ha-kshayim</i> survived despite the-difficulties eng: ‘Survived despite of difficulties’</p>	3	Non-decomposable
<p><i>taman et rosho ba-xol</i> hid acc head+his in+the-sand</p> <p>heb: <i>hitalem me-ha-macav</i> ignored from-the-situation eng: ‘Avoided dealing with the situation’</p>	3	Non-decomposable
<p><i>sam et kol ha-beycim be-sal exad</i> put acc all the-eggs in-basket one</p> <p>heb: <i>hishkia et kol ha-maacim/ksafim be-makom exad</i> invested acc all the-efforts/money in-place one eng: ‘Invested all his efforts/money in one direction’</p>	3	Decomposable +Complex NP

<p><i>hosif shemen la-medura</i> added oil to+the-fire</p> <p>heb: <i>hixmir et ha-macav be-emcaut maase o meyda nosaf</i> worsened acc the-situation in-means action or information additional</p> <p>eng: ‘Worsened the current situation with additional action or information’</p>	4	Decomposable
<p><i>dafak et ha-rosh ba-kir</i> beat acc the-head in+the-wall</p> <p>heb: <i>himshix lamrot kol ha-sikuim</i> continued against all the-odds</p> <p>eng: ‘Continued against all odds’</p>	4	Non-decomposable
<p><i>harag shtey ciporim be-maka axat</i> killed two birds in-hit one</p> <p>heb: <i>hisig shtey matarot be-emcaut peula axat</i> accomplished two goals in-means action one</p> <p>eng: ‘Accomplished two goals in one action’</p>	4	Decomposable +Complex NP
<p><i>hixnis rosh bari le-mita xola</i> inserted head healthy into-bed sick</p> <p>heb: <i>histabex she-lo la-corex</i> got-into-trouble that-not for-the-need</p> <p>eng: ‘Got into unnecessary trouble’</p>	4	Non-decomposable +Complex NP
<p><i>sam et ha-klafim al ha-shulxan</i> put acc the-cards on the-table</p> <p>heb: <i>amar et ha-dvarim ke-havayatam</i> told acc the-things as-being</p> <p>eng: ‘Told things as they are’</p>	4	Decomposable
<p><i>zara melax al ha-pcaim</i> sprinkled salt on the-wounds</p> <p>heb: <i>hosif elbon la-pgia</i> added insult to+the-injury</p> <p>eng: ‘Added insult to injury’</p>	5	Decomposable

<i>raa et ha-or bi-kce ha-minhara</i> saw acc the-light at-end the-tunnel heb: <i>xashav she sof ha-sevel karov</i> thought that end the-suffering near eng: ‘Thought that the end of suffering is near’	5	Non-decomposable +Complex NP
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30. Items: gapped idioms

Idioms	Frequency	Additional Features
<i>shalaf et X me-ha-sharvul</i> took acc X out-the-sleeve heb: <i>himci et X le-lo haxana mukdemet</i> invented acc X without preparation former eng: ‘Invented X on the fly’	3	Decomposable D.O. gap
<i>hixnis et X la-tmuna</i> inserted acc X to+the-picture heb: <i>shitef et X ba-toxnit</i> included acc X in+the-event/program eng: ‘Included X in the event/program’	3	Decomposable D.O. gap
<i>heela le-X et laxac ha-dam</i> raised to-X acc pressure the-blood heb: <i>hidig/hixis et X</i> worried/angered acc X eng: ‘Worried/angered X’	3	Non-decomposable I.O. gap +Complex NP
<i>taman le-X pax</i> concealed to-X tin heb: <i>hexin le-X malkodet</i> prepared for-X trap eng: ‘Prepared a trap for X’	4	Decomposable I.O. gap
<i>hifna le-X et ha-gav</i> turned to-X acc the-back heb: <i>bagad be-X</i> betrayed in-X eng: ‘Betrayed X’	4	Non-decomposable I.O. gap

<p><i>hipil al X tik</i> dropped on X bag</p> <p>heb: <i>hikca le-X mesima lo-neima</i> allotted to-X task non-pleasant eng: ‘Gave X an unpleasant task’</p>	4	Decomposable I.O. gap
<p><i>hixnis et X la-kis ha-katan</i> inserted acc X to+the-pocket the-small</p> <p>heb: <i>hitala al X</i> overcame on X eng: ‘Overcame X’</p>	4	Non-decomposable D.O. gap +Complex NP
<p><i>sovev et X al ha-ecba ha-ktana</i> rotated acc X on the-finger the-small</p> <p>heb: <i>minpel et X</i> manipulated acc X eng: ‘Manipulated X’</p>	4	Non-decomposable D.O. gap +Complex NP
<p><i>hidlik le-X nura aduma</i> lighted to-X bulb red</p> <p>heb: <i>hitria et X</i> made-suspicious acc X eng: ‘Made X suspicious’</p>	4	Non-decomposable I.O. gap +Complex NP
<p><i>hoci et X me-ha-kelim</i> took+out acc X from-the-dishes</p> <p>heb: <i>hirgiz et X</i> irritated acc X eng: ‘Irritated X’</p>	5	Non-decomposable D.O. gap

The idioms were chosen out of a pool of 55 familiar Hebrew idioms, pre-tested for their frequency in the adult language. Specifically, 70 native speakers of Hebrew (aged 20 to 50) participated in a pre-test, in which they were asked to rate each idiom on a scale of 1 to 5 with respect to its perceived frequency. The precise question was ‘On a scale of 1 to 5, approximate the idiom’s frequency, that is, the chance that you would use or hear someone else use this idiom’ (where: 1=never, 2=rarely, 3=sometimes, 4=often, and 5=very often). Among the most frequent idioms, that is, rated 3 and above, 10 full and 10 gapped idioms were chosen in a way to conform to the limitations listed below. Frequency was distributed evenly across the two conditions (i.e. full and gapped idioms). Among gapped idioms, 5 had their gap in the direct object position (e.g. *shalaf et X me-ha-sharvul* ‘took acc X out of the sleeve’, idiomatic: ‘invented X on the fly’) and 5 had their gap in the indirect object position (e.g. *hidlik le-X nura aduma* ‘lighted to-X a red bulb’, idiomatic: ‘made X suspicious’).

Finally, we wanted to investigate the relation between decomposability and rate of acquisition. Recall that decomposable idioms like *spill the beans* are expressions whose idiomatic meaning can be distributed onto their subparts. In contrast, non-decomposable idioms like *kick the bucket* are expressions whose idiomatic meaning cannot be distributed onto their subparts, being associated with the expression as a whole. Drawing on previous work of Nunberg, Sag & Wasow (1994) and Van der Voot & Vonk (1995), decomposability is defined by Horvath & Siloni (2012) as in (31):

31. **Decomposability:**

An idiom is decomposable iff it is isomorphic with its idiomatic interpretation – that is, iff each of its components (verb, modifiers) corresponds to a specific part in its idiomatic interpretation

We used this definition as follows: if an idiom could be easily rephrased with a single lexical item, we considered this lexical item to represent the idiom’s interpretation. Such idioms were classified as non-decomposable, as a result. In other words, idioms permitting rephrasing of their idiomatic

interpretation by a single lexical item were considered non-decomposable, as their interpretation (i.e. the verb) was not isomorphic with their syntactic structure. For instance, the idiom *sovev et X al ha-ecba ha-ktana* ‘rotated X on the small finger’ was considered to be non-decomposable, as its interpretation was most naturally rephrased with one lexical item, namely, *minpel (et X)* ‘manipulated (acc X)’.

If an idiom could not be rephrased with a single lexical item, two scenarios were possible:

a. If it could be rephrased in an isomorphic manner, such that each of its components corresponded to a specific part in its idiomatic interpretation, it was considered decomposable. For instance, the idiom *hixnis et X la-tmuna* (lit. ‘inserted X in the picture’) was considered decomposable, as its idiomatic interpretation *shitef et X ba-toxnit* ‘included X in the program’ was isomorphic with its phrase structure (i.e. *hixnis*= ‘included’, *la-tmuna*= ‘in the program/event’).

b. If it could not be rephrased in an isomorphic manner, it was considered non-decomposable. Thus, idioms which could not be rephrased (naturally) by a single lexical item, nor with an isomorphic interpretation, were classified as non-decomposable, as their idiomatic interpretation could not be spread evenly across their components. For example, the idiom *hixzik et ha-rosh meal ha-mayim* (lit.: ‘held the head above the water’) was considered non-decomposable, as its most natural interpretation was *sarad lamrot ha-kshayim* ‘survived despite of difficulties’ – non-isomorphic (i.e. the interpretation cannot be evenly distributed across the idiom’s components).

In unclear or borderline cases, additional native speakers were consulted regarding the more natural rephrasing of the idiom’s interpretation. For example, the gapped idiom *hoci et X me-ha-kelim* ‘took-out acc X from-the-dishes’, was considered non-decomposable, as its idiomatic interpretation is most naturally rephrased in one word, namely, ‘irritated X’. In contrast, the full idiom *harag shtey ciporim be-maka axat* ‘killed two birds in-hit one’ was considered decomposable, as it is isomorphic

with its idiomatic interpretation, which is ‘accomplished two goals with one action’. In order to examine the relation between decomposability and idiom comprehension, 5 full idioms and 4 gapped idioms were chosen to be decomposable.⁹

2.2.4 Method

As mentioned above, each idiom was preceded by a short story setting the background for its felicitous use. The stories were composed of words familiar to third-graders, each consisting of 5-8 sentences of average length (as illustrated below). Every story was checked with (adult) native speakers with respect to its general coherence and more specifically, with respect to its ability to provide a suitable context for the target idiom. As the idiom was the final sentence of the story, we wanted to make sure that its use was indeed felicitous in the given context, and that overall, it sounded as a natural ending to the story as a whole. Importantly, the contexts were composed in a way that made no use of or reference to the literal meanings of the words in target idioms. To illustrate this with two English examples, for an idiom like *kick the bucket* the context wouldn't mention any buckets or kicking events; similarly, for an idiom like *break the ice*, the context would involve no ice and no breaking events. For simplicity and coherence, all the contexts used the same three children characters, namely, Dani, Dina and Ayelet (familiar Hebrew names), in order to make it easier for children to remember and relate to them. Finally, and importantly, the specific form of the target sentence (i.e. the idiom) – its tense, mood and aspect – varied between idioms so that the most natural sounding form, as judged by native speakers, was chosen in each case. Two contexts from the experiment are presented below (translated from Hebrew to English for the purpose of presentation). The reader is referred to Appendix A for the full list of contexts.

⁹ The number of idioms was not even across the two groups of idioms due to the additional considerations illustrated above, namely: choosing familiar opaque idioms, of a particular syntactic structure (V NP/PP PP), frequency etc. Among the pool of idioms which we extracted from the idiom dictionary, only 5 full and 4 gapped idioms answered to all these criteria – in addition to being classified as decomposable.

32. a. *sovev et X al-ha-ecba ha-ktana*
rotated acc X on-the-finger the-small
'Rotated X on (one's) small finger'
Idiomatic: 'Manipulated X'

b. Dani knows that when he starts crying around Dina, she usually does whatever he wants, as she doesn't like hearing him cry. Once, they went to a toy shop together. Dina bought a gift for her friend – a toy elephant. Dani saw the elephant, and wanted one too! Dina promised to buy him a toy like this for his birthday. But Dani wanted now! He started crying right away, and didn't stop, until...Dina gave up and bought him the toy.

Sometimes, Dani manages to turn Dina on (his) small finger.

33. a. *hifna le-X et ha-gav*
turned to-X acc the-back
'Turn (one's) back on someone'
Idiomatic: 'Betrayed X'

b. Ayelet wanted to prepare a huge wreath for her mother's birthday. She doesn't really know how to prepare wreaths, but Dani does it beautifully. Ayelet asked for his help, and he promised to help her. But when the big day came, Dani just said he was too busy.

Ayelet was really hurt that a friend like Dani turned his back to her.

In order to render the task more fun and engaging for children, the stories were supplemented with colorful pictures. At the beginning of each session, children were presented with pictures of the three characters, namely, Dani, Dina and Ayelet. Subsequently, pictures were used in order to illustrate the main feature or participant of each story. Thus, for example, in the context in (32), children were presented with a picture of a toy elephant, and in case of the context in (33) they were presented with a picture of a colorful wreath. (Once again, the reader is referred to Appendix A at the end of this chapter for the full list of items, stories and pictures.)

2.2.5 Task and Procedure

Children's knowledge of idioms was assessed with a multiple-choice task. Specifically, they had to choose the most accurate interpretation of each idiom, with three possible answers: (a) literal interpretation, (b) correct idiomatic interpretation, (c) invented, contextually appropriate, idiomatic interpretation. The third option was added in order to distinguish between children who knew a certain idiom along with its adult interpretation, from children who knew that a certain idiom is indeed an idiom, but lacked the knowledge of its precise interpretation. Thus, for example, in case of an idiom like the one in (33), children were asked: 'What does it mean that Dani turned his back on Ayelet?', with the three options being: (a) That Dani faced her with his back, (b) That Dani betrayed her, (c) That Dani lied to her. While both (b) and (c) are contextually appropriate, the most accurate rephrasing of the idiom's interpretation is the one in (b). The order of the answers was randomized and counterbalanced between items.

The invented meanings were tested by asking native speaker judgments, both for their coherence with the contexts, and, more importantly, for their differentiability from the correct idiomatic interpretations. That is, we made sure that the invented idiomatic meanings were: (i) plausible in the specific contexts, and (ii) distinguishable from the correct idiomatic interpretations.

In addition to the target question regarding the idiom's interpretation, a general comprehension question was raised once in every 3-4 stories, in order to make sure that children were paying attention to the task. The comprehension question pertained to the main event described in the story. It was presented in a similar vein to the target question, namely, as a multiple choice with three possible answers. To illustrate once again with the example in (33), the general comprehension question was: 'Who prepares really beautiful wreaths?' with the answers being (a) Ayelet, (b) Ayelet's mom, (c) Dani – the latter being the correct one.

The stimuli (i.e. stories along with pictures and questions) were printed as individual booklets, with one story/item on each page. Their order of presentation was pseudo-randomized in order to avoid a succession of similar idioms (i.e. idioms of the same type, like full/gapped). Each child was tested individually in a quiet room in their school. The task was presented and explained, with explicit explanation that ‘some expressions mean something differ from what they say’, and an illustration with 1 or 2 familiar idiomatic expressions which were not included in the actual study. Following this presentation, each context was read out loud, repeating when necessary and clarifying unclear words. Subsequently, the child was presented with the multiple-choice question, with the different options being read out loud as well. Most children could read fairly well, and they could follow the text along with the experimenter. Of course, this was not demanded neither expected from them, but it was a personal choice of each child. After the target question, the child was either presented with the next story or with the control question (which always followed the target question). Overall, each session lasted between 20 and 30 minutes. At the end of each session, children were rewarded for their participation with stickers of their choice, regardless of their performance. No notes or grades were given, and no feedback as to the correct answer was provided during the test.

2.2.6 Results: 1st and 2nd grades

Let me first summarize the results of the experiments conducted with first graders (children aged 6-7) and second graders (children aged 7-8), reported in Fadlon et al. (2012). The results are as follows: first graders’ comprehension was at chance level; second graders, in contrast, performed above chance, showing the commencement of idiom knowledge.

Examining each type of idiom separately, it was found that second graders’ performance with gapped idioms was not significantly different from their performance with full ones, and that their performance with decomposable idioms was also not significantly different from their performance with non-decomposable idioms. Notably, 48% of mistakes made by first graders, and 25% of

mistakes made by second graders, were literal responses. Recall that literal responses were incompatible with the contextual information. Nevertheless, first graders chose them instead of the more suitable invented idiomatic meaning in almost half of the cases, and second graders – in quarter of the cases. Thus, it seems that the notion ‘idiom’ is still under-developed in these age groups, allowing children to select the literal meaning even when it was incompatible with the given context. The main goal of the consecutive experiment on third-graders was to examine whether at this age, children already exhibit adult-like knowledge of idioms, renouncing the literal responses.

2.2.7 Results: 3rd grade

With this as our background, let us turn to examine the results of third graders.¹⁰ Overall, they performed significantly above chance level with respect to choosing the correct interpretation: 90 % correct responses ($t(29)= 19.08$ $p< 0.0001$).

To translate the numbers presented above into words, this means that among the 600 possible answers (i.e. 20 idioms X 30 kids = 600 answers), 544 correct answers were provided. The remaining mistakes (i.e. 56) were almost exclusively choosing the invented idiomatic meaning instead of the correct idiomatic meaning. Only 3 literal choices were made – and all belonged to the same child. With respect to the properties distinguishing the different idiomatic expressions, no significant difference was found between gapped and full idioms ($t(29)= 1.35$, $p=0.18$) or between decomposable and non-decomposable idioms ($t(29)= 1.8$, $p= 0.08$).

¹⁰ The following statistical analysis of the results was performed by Julie Fadlon in the frame of BSF Grant No. 2009269 (PIs Prof. Tal Siloni, Prof. Julia Horvath and Prof. Ken Wexler).

2.2.8 Discussion

Looking at the findings from all age groups, it is evident that third graders attained a mastery of the notion 'idiom' – even when they didn't know the particular idiomatic expression, they chose the invented idiomatic meaning and not the literal meaning, as opposed to both first and second graders. The fact that the percentage of literal responses drops and is no longer significant at third grade shows that children know that only the idiomatic meanings are appropriate answers among the responses. In other words, it is evident that third graders understand the notion 'idiom', therefore not choosing the literal answer even when they didn't know the idiom's correct interpretation.

One could suggest that the extremely high percentage of correct responses (i.e. with third graders) is related to the supporting contextual information. While context indeed suggests several possible interpretations, recall that children had to choose between the correct (adult) meaning and a contextually suitable, though incorrect, meaning. Therefore, percentage of correct responses cannot be explained away by children's ability to use contextual information. Also, recall that we used only opaque idioms, in order to make it harder for children to guess or conclude the meaning of unfamiliar idioms from the context. Thus, it seems that children acquiring Hebrew reach a fairly solid level of idiom knowledge by the time they are 8 years old. With this in mind, let us turn to examine children's (partial) production of the very same idioms.

2.3 Acquisition of Hebrew Idioms: Completion

Similarly to the multiple-choice study detailed above, the current study aims to assess children's ability to complete different types of idioms. Sentence completion tasks, used frequently in L1 and L2 acquisition (REF), can hint not only on children's comprehension but also on their ability to produce idiomatic expressions (REF). Based on studies of idiom acquisition in Italian and English, as well as the study of proverb acquisition in Hebrew, we would expect idiom production to be more difficult than idiom comprehension (Ackerman 1983; Berman & Ravid (2010); Clark & Hecht 1983;

Levorato & Cacciari 1995). Furthermore, we might expect that the completion task will prove to be more difficult even for third graders, whose performance in the comprehension task was near ceiling.

2.3.1 Subjects (3rd graders)

As before, a total of 30 children participated in the study. Importantly, these were different children, with no child participating in both experiments. The subjects were third-graders, aged 8 to 9;6 (mean age: 8;6), studying at the same school (Tel-Nordau, in central Tel-Aviv). As before, their socio-economic status, as evident from the geographical location of the school, was mid-high. All children were native speakers of Hebrew, with no known language or cognitive impairments.

2.3.2 Materials

The materials consisted of the same 20 idioms used in the multiple-choice study, together with their contextual stories. The only difference pertained to the specific presentation of the target idioms, that is, each idiom included a ‘blank’ to be completed by children. I elaborate on this further below. For the reader’s convenience, I repeat the materials below in (34)-(35), marking the location of the blank with underline (i.e. the underlined word was omitted in the actual experiment).

34. Items: full idioms

Idioms	Frequency	Additional Features
<p><i>hixzik et ha-rosh meal ha-mayim</i> held acc the-head above the-water</p> <p>heb: <i>sarad lamrot ha-kshayim</i> survived despite the-difficulties eng: ‘Survived despite of difficulties’</p>	3	Non-decomposable
<p><i>taman et rosho ba-xol</i> hid acc head+his in+the-sand</p> <p>heb: <i>hitalem me-ha-macav</i></p>	3	Non-decomposable

<p>ignored from-the-situation eng: ‘Avoided dealing with the situation’</p>		
<p><i>sam et kol ha-beycim be-sal exad</i> put acc all the-eggs in-basket one</p> <p>heb: <i>hishkia et kol ha-maacim/ksafim be-makom exad</i> invested acc all the-efforts/money in-place one</p> <p>eng: ‘Invested all his efforts/money in one direction’</p>	3	Decomposable +Complex NP
<p><i>hosif shemen la-medura</i> added oil to+the-fire</p> <p>heb: <i>hixmir et ha-macav be-emcaut maase o meyda nosaf</i> worsened acc the-situation in-means action or information additional</p> <p>eng: ‘Worsened the current situation with additional action or information’</p>	4	Decomposable
<p><i>dafak et ha-rosh ba-kir</i> beat acc the-head in+the-wall</p> <p>heb: <i>himshix lamrot kol ha-sikuim</i> continued against all the-odds</p> <p>eng: ‘Continued against all odds’</p>	4	Non-decomposable
<p><i>harag shtey ciporim be-maka axat</i> killed two birds in-hit one</p> <p>heb: <i>hisig shtey matarot be-emcaut peula axat</i> accomplished two goals in-means action one</p> <p>eng: ‘Accomplished two goals in one action’</p>	4	Decomposable +Complex NP
<p><i>hixnis rosh bari le-mita xola</i> inserted head healthy into-bed sick</p> <p>heb: <i>histabex she-lo la-corex</i> got-into-trouble that-not for-the-need</p> <p>eng: ‘Got into unnecessary trouble’</p>	4	Non-decomposable +Complex NP
<p><i>sam et ha-klafim al ha-shulxan</i> put acc the-cards on the-table</p> <p>heb: <i>amar et ha-dvarim ke-havayatam</i></p>	4	Decomposable

told acc the-things as-being eng: 'Told things as they are'		
<i>zara melax al ha-pcaim</i> sprinkled salt on the-wounds heb: <i>hosif elbon la-pgia</i> added insult to+the-injury eng: 'Added insult to injury'	5	Decomposable
<i>raa et ha-or bi-kce ha-minhara</i> saw acc the-light at-end the-tunnel heb: <i>xashav she sof ha-sevel karov</i> thought that end the-suffering near eng: 'Thought that the end of suffering is near'	5	Non-decomposable +Complex NP

35. Items: gapped idioms

Idioms	Frequency	Additional Features
<i>shalaf et X me-ha-sharvul</i> took acc X out-the-sleeve heb: <i>himci et X le-lo haxana mukdemet</i> invented acc X without preparation former eng: 'Invented X on the fly'	3	Decomposable D.O. gap
<i>hixnis et X la-tmuna</i> inserted acc X to+the-picture heb: <i>shitef et X ba-toxnit</i> included acc X in+the-event/program eng: 'Included X in the event/program'	3	Decomposable D.O. gap
<i>heela le-X et laxac ha-dam</i> raised to-X acc pressure the-blood heb: <i>hidig/hixis et X</i> worried/angered acc X eng: 'Worried/angered X'	3	Non-decomposable I.O. gap +Complex NP
<i>taman le-X pax</i> concealed to-X tin heb: <i>hexin le-X malkodet</i>	4	Decomposable I.O. gap

<p>prepared for-X trap eng: ‘Prepared a trap for X’</p>		
<p><i>hifna le-X et ha-gav</i> turned to-X acc the-back</p> <p>heb: <i>bagad be-X</i> betrayed in-X eng: ‘Betrayed X’</p>	4	Non-decomposable I.O. gap
<p><i>hipil al X tik</i> dropped on X bag</p> <p>heb: <i>hikca le-X mesima lo-neima</i> allotted to-X task non-pleasant eng: ‘Gave X an unpleasant task’</p>	4	Decomposable I.O. gap
<p><i>hixnis et X la-kis ha-katan</i> inserted acc X to+the-pocket the-small</p> <p>heb: <i>hitala al X</i> overcame on X eng: ‘Overcame X’</p>	4	Non-decomposable D.O. gap +Complex NP
<p><i>sovev et X al ha-ecba ha-ktana</i> rotated acc X on the-finger the-small</p> <p>heb: <i>minpel et X</i> manipulated acc X eng: ‘Manipulated X’</p>	4	Non-decomposable D.O. gap +Complex NP
<p><i>hidlik le-X nura aduma</i> lighted to-X bulb red</p> <p>heb: <i>hitria et X</i> made-suspicious acc X eng: ‘Made X suspicious’</p>	4	Non-decomposable I.O. gap +Complex NP
<p><i>hoci et X me-ha-kelim</i> took+out acc X from-the-dishes</p> <p>heb: <i>hirgiz et X</i> irritated acc X eng: ‘Irritated X’</p>	5	Non-decomposable D.O. gap

2.3.3 Task and Procedure

Children's production of idioms was assessed with a completion task. Specifically, children were read the stories culminating in the target idiom, which contained a blank for them to fill. The missing material always corresponded to a lexical NP, but its location differed between specific items. In case of gapped idioms, the location of the blank was the remaining lexical item or its subpart. For example, in case of a gapped idiom like *hoci et X me-ha-kelim* 'took+out acc X from-the-dishes', with the idiomatic meaning 'irritated X', the child was presented with *hoci et aba me-ha-_____* 'took+out acc father from-the-_____', and had to fill the missing NP *kelim* 'dishes' (note that X is replaced with a contextually appropriate lexical item). In case the remaining lexical item was a complex NP, only part of it was omitted. For example, in case of a gapped idiom like *hidlik le-X nura aduma* 'lighted to-X bulb red', with the idiomatic meaning 'made X suspicious', the child was presented with *hidlik le-Ayelet nura _____* 'lighted to-Ayelet bulb _____', and had to fill *aduma* 'red'.

In case of full idioms, the location of the blank was balanced between the two objects (i.e. direct and indirect), taking into account the following two considerations: (a) on the one hand, the ability to guess the missing word, and (b) on the other hand, the difficulty to fill in the blank. On the one hand, we wanted to avoid a case in which the child could guess the remaining word simply based on the available lexical items. For example, were the previously mentioned idiom given in the form *hidlik le-X ___ aduma* 'lighted to-X ___ red', it would have made it easier for children to guess the missing word *nura* 'bulb' regardless of their knowledge of the idiom itself, relying only on the given lexical items (i.e. light, red). On the other hand, we wanted to avoid a case in which the child would have difficulty retrieving the missing lexical item, simply because not enough information was available. Each item, then, was examined from the perspective of these two conflicting forces, eventually choosing a location that would maximally balance the two.

For example, for the idiom *sam et kol ha-beycim be-sal exad* ‘put acc all the-eggs in-basket one’, with the idiomatic meaning ‘invested all his/her money/efforts in one direction’, the child was presented with *sam et kol ha-_____ be-sal exad* ‘put acc all the-_____ in basket one’, and had to fill the missing NP *beycim* ‘eggs’. In this case, then, the blank corresponded to the (sub-part of) direct object of the main verb. In other cases, the blank corresponded to an NP located inside the indirect object. For example, for the idiom *taman et rosho ba-xol* ‘hid acc head+his in+the-sand’, with the idiomatic meaning ‘avoided dealing with a problem/unpleasant task’, the child was presented with *taman et rosho ba-_____* ‘hid acc head+his in+the-_____’, and had to fill the missing NP *xol* ‘sand’. Similarly to the previous study, a general comprehension question was raised once in every 3-4 stories, in order to make sure that children are paying attention to the task. The comprehension question pertained to the main event described in the story, and as before, it was presented as a multiple choice with three possible answers.

The stimuli (i.e. stories along with pictures and questions) were printed as individual booklets, with one story/item on each page. Their order of presentation was pseudo-randomized, avoiding a succession of similar idioms (i.e. idioms of the same type, like full/gapped). As before, each child was tested individually in a quiet room in school. The task was briefly presented to him/her, with an explicit presentation of ‘expressions that mean something else from what they say’, illustrated with the help of a few very familiar Hebrew proverbs. Additionally, the idea of ‘completion’ was illustrated, and the phonetic representation of the printed blank was clarified. Following this presentation, each context was read out loud, repeating when necessary and clarifying unclear words. The target sentence was then read out loud, with the blank being pronounced as a long vocalization of the letter ‘m’. Repetitions and clarifications were provided as necessary. As before, most children could read fairly well, and they could follow the text along. Of course, this was not demanded neither expected from them, but it was a personal choice of each child. After the

completion, the child was either presented with the next story or with the comprehension question. Overall, each session lasted around 30 minutes. At the end of each session, children were rewarded for their participation with stickers of their choice, regardless of their performance. No notes or grades were given, and no feedback as to the correct answer was provided during the test.

2.3.4 Results: 1st and 2nd grades

As before, allow me to start by presenting the results of the parallel study conducted on first and second graders. Fadlon et al. (2012) report that the performance of first graders was extremely poor, with only 8.6% of the items being completed correctly. Thus, it seems that their ability to complete Hebrew idioms is practically non-existent. While no significant difference was found between gapped and full idioms, their performance with non-decomposable idioms was found to be significantly better than their performance with decomposable idioms. Turning now to second graders, Fadlon et al. (2012) report that their performance was only slightly better, with 13.8% of the items completed correctly. Their performance with gapped idioms was found to be significantly better than with full idioms, and once again, their performance with non-decomposable items was found to be significantly better than their performance with decomposable items.

2.3.5 Results: 3rd grade

Turning to examine third graders, their performance was found to be the best among the three age groups.¹¹ The mean of correct answers was 12.5 per item, resulting in 41.6% of the items being completed correctly. Before proceeding, it should be clarified what was counted as a correct response. In contrast with the previous experiment, where multiple choice task was used and its scoring was pretty straightforward, the scoring of a completion was slightly more intricate.

¹¹ As before, the following statistical analysis of the results was performed by Julie Fadlon in the frame of BSF Grant No. 2009269 (PIs Prof. Tal Siloni, Prof. Julia Horvath).

Specifically, it had to be decided which incorrect answers could nevertheless be considered as correct, or at least, as an evidence for the knowledge of the relevant idiom – and which could not. The following guideline was used: other than the exact target word, a response was considered to be correct if it was either (i) a semantically close word (e.g. *adama* ‘earth’ instead of *xol* ‘sand’) or (ii) a word which creates another, contextually appropriate, idiom (e.g. *hoci et aba me-ha-daat* ‘took+out acc father from-the-mind’, to mean ‘irritated father’, instead of the target *hoci et aba me-ha-kelim* ‘took+out acc father from-dishes’, to mean also ‘irritated father’). Mistakes were further classified into four categories: (a) literal responses: *hexzika et ha-rosh meal ha-sal* (target: *mayim*), ‘held the head above the basket’ (target: ‘water’), when the context was about basketball; (b) distantly related word from the same semantic field: *lasim et kol ha-gzarim be-sal exad* (target: *beycim*), ‘put all the carrots in one basket’ (target: ‘eggs’); (c) general term: *lasim et kol ha-dvarim be-sal exad*, ‘put all the things in one basket’; (d) else: *heela le-aba et laxac ha-zman* (target: *dam*), ‘raised to-father the pressure of the-time’ (target: ‘blood’). Literal mistakes were the most frequent (41.2% of all mistakes), followed by ‘else’ (33.2% of all mistakes), followed by related word production (13.6% of all mistakes), and finally, followed by general word replacement (12.1% of all mistakes).

Turning back to the correct responses, no significant difference was found between gapped and full idioms ($t(29)=1.8$, $p=0.16$), while third graders’ performance with non-decomposable idioms was found to be significantly better than their performance with decomposable idioms ($t(29)=5.7$, $p<0.0001$).

2.3.6 Discussion

As expected from previous studies (for example, Berman & Ravid 2010; Levorato & Cacciari 1995), children’s performance in the production task was significantly worse than their performance in the comprehension task. Looking solely at third graders, who performed near ceiling in the

comprehension task, we see that they could complete only 41.6% of the items correctly. Despite of the supporting contexts, the completion task was found to be significantly more taxing for children. Notably, in all age groups, non-decomposable idioms (e.g. *kick the bucket*) were found to be significantly easier to produce than decomposable idioms (e.g. *pull strings*). At first glance, this might seem counterintuitive, as the meaning of non-decomposable idioms is associated with the phrase as a whole, rendering it harder to infer from the supporting context. This is also surprising, given the attested difficulty that children have with *comprehension* of non-decomposable idioms (as shown in the works of Caillies & Le Sourn-Bissaoui, 2006; Gibbs 1987, 1991; Levorato & Cacciari, 1999) (though recall that Hebrew comprehension study found no such difference).

A possible direction to account for this finding is proposed in Fadlon et al. (2012) with respect to 2nd graders. Specifically, they propose that non-decomposable idioms become associated with a concept they denote (e.g. *kick the bucket* ‘die’), rendering their retrieval from the mental lexicon easier than that of decomposable idioms. In other words, since the idiom becomes ‘wired’, so to speak, with the concept it denotes, it allows for another means to retrieve it from the mental lexicon, in contrast with decomposable idioms, which form no such link hence must be retrieved word-by-word. Clearly, in its intuitive phrasing as above, this idea is rather under-articulated. As this is a first study on the acquisition of Hebrew idioms, any conclusions should be drawn with maximal caution. Future research will show whether the attested difficulty with decomposable idioms can be replicated, and if so, the above should suggest an initial direction for its explanation.

2.4 Summary

In this chapter, I have presented and discussed two experimental studies on the L1 acquisition of Hebrew idioms. As noted throughout this chapter, both are novel studies – hence, any conclusions should be drawn with caution. We have seen that third graders have little difficulty understanding idiomatic expressions of different kinds, as evident from their 90% success in choosing the correct

answer in a multiple-choice task. This was found to be in sharp contrast with their ability to produce (parts of) the same idioms in a completion task, where less than 50% were completed correctly.

We have also seen the results of a parallel study on first and second graders, which showed that first graders have extreme difficulty both with multiple-choice (chance) and completion (less than 10% correct responses), while second graders show the beginning of idiom knowledge with more than 50% correct responses in the multiple-choice, and slightly above 10% in the completion task (Fadlon et al. 2012). The passage from second to third grade seems critical in the children's knowledge of idioms and their general figurative competence.

The results obtained from this study could therefore serve as a reference point for future studies: if the question at hand requires children to have some knowledge of idioms, clearly first and second graders should be tested with caution, if at all. As this study merely 'scratches the surface', so to speak, it gives rise to a multitude of additional questions. For instance, it would be interesting to compare the performance of third graders in another type of comprehension task, namely, idiom explanation. As previewed by Piaget (1972), children should have more difficulty explaining the meaning of idioms than selecting the correct meaning among several alternatives. Therefore, it would be interesting to observe whether the choice of task would influence the otherwise outstanding performance of this age group.

Additionally, it would be interesting to examine whether a different type of production task would improve the results of first and second graders. For example, a judgment task in which a toy puppet would produce idioms and children would need to judge whether it did so correctly. While certainly different from a 'pure' production task, this game could reveal bits of idiomatic knowledge otherwise hidden behind memory or processing limitations of this stage in acquisition. Additionally, and as it was already noted before, it would be interesting to repeat the production experiment in order to see whether the difference between decomposable and non-decomposable idioms is

replicable. Finally, and connected to the following chapters of this dissertation, it would be interesting to examine the acquisition of clausal idioms (precise definition and discussion is reserved until chapter 5), and compare it with that of phrasal idioms. With this in mind, let me turn to elaborate on the suggested distinction between ‘phrasal’ and ‘clausal’ idioms.

Appendix A: Experimental Stories, Items and Pictures

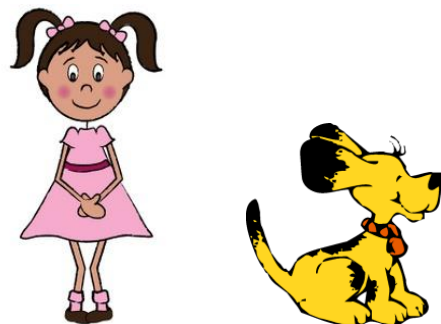
The underline marks the location of the gap for the completion experiment

Note that the translations are presented in a way as to make them maximally similar to their Hebrew counterparts, even if this means they sound less natural in English.

1. *hipil al-X tik*
dropped on-X bag
'Dropped a bag on X'
Idiomatic: 'Gave X an unpleasant task'

זו איילת, חברה של דני, ויש לה כלב קטן וחמוד.

This is Ayelet, Dani's friend, and she has a cute little dog.



כשאילת נסעה עם ההורים לצפון, היא ביקשה מדני לשמור לה על הכלב. בהתחלה דני היסס כי יש לו חתול.
When she went with her parents to the north, she asked Dani to watch her dog. At first, Dani hesitated as he has a cat.



בסופו של דבר, איילת הצליחה לשכנע אותו. אבל כבר היום הראשון ביחד היה ממש קשה – הכלב לא הסתדר עם החתול, לא רצה לאכול, נבח ממש חזק...בסוף היום דני היה ממש עייף! זה לא פשוט לשמור על כלב של מישהו אחר ועוד כשיש לך חתול בבית!

At the end, Ayelet managed to convince him. But already the first day together was tough – the dog didn't get along with the cat, didn't want to eat, and barked loudly...at the end of the day, Dani was exhausted! It's not easy to watch someone else's dog, especially when you have a cat at home!

דני הבין שאילת הפילה עליו תיק
Dani realized that Ayelet dropped on him bag

מה זה אומר: 'איילת הפילה עליו תיק'?

- א. איילת הטילה עליו משימה קשה
- ב. איילת הפילה עליו את הילקוט שלה
- ג. איילת גרמה לו למצב רוח רע

What does it mean: 'Ayelet dropped on him bag'?

- a. Ayelet gave him a difficult task
- b. Ayelet dropped her schoolbag on him
- c. Ayelet ruined his mood

על מי דני היה צריך לשמור?

- א. על הכלב של איילת
- ב. על החתול של איילת
- ג. על איילת

Who did Dani have to watch?

- a. Ayelet's dog
- b. Ayelet's cat
- c. Ayelet

2. *hixnis rosh bari le-mita xola*
inserted head healthy to-bed sick
'Inserted a healthy head into a sick bed'
Idiomatic: 'Got into unnecessary trouble'

בשיעור מלאכה, הכיתה של דני התחלקה לכמה קבוצות וכל קבוצה עבדה בנפרד. הילדים הכינו מסכות לפורים.
During handicraft, Dani's class divided into a few groups and each group worked separately from the rest. Kids prepared masks for Purim.



בהתחלה, דני רצה לעבוד עם יוסי ובן, כי הם הכינו מסיכה של המן. הוא רץ להצטרף אליהם. אבל אז הוא שמע שהם מתווכחים ביניהם כל הזמן – בן רוצה לגזור וגם יוסי רוצה לגזור, יוסי רוצה להדביק ובן בדיוק צריך את הדבק. דני הבין שהם הולכים לריב כל הזמן על שטויות והחליט להצטרף לקבוצה אחרת.

At first, Dani wanted to work with Yosi and Ben, as they were preparing a mask of Hamman. He ran to join them. But then he heard that they argued all the time – Ben wanted to cut, and Yosi also wanted to cut, Yosi wanted to glue, and Ben needed the glue at that moment. Dani realized that they will fight all the time, and decided to join another group.

דני לא רצה להכניס ראש בריא למיטה חולה
Dani didn't want to insert healthy head into bed sick

מה זה אומר 'להכניס ראש בריא למיטה חולה'?

א. להשתלב במשהו שיש בו קשיים או צרות

ב. להפוך להיות חולה

ג. להצטרף לקבוצה אחרת

What does it mean: 'To insert a healthy head in sick bed'?

- a. To join something with existing difficulties
- b. To become sick
- c. To join another group

מה הילדים עשו בשיעור?

א. קפצו בחבל

ב. קראו את ההגדה

ג. הכינו מסיכות לפורים

What did the kids do in class?

- a. Jumped the rope
- b. Read the 'Agada'
- c. Prepared masks for Purim

3. *hifna le-X et ha-gay*
turned to-X acc the back
'Turned (one's) back on someone'
Idiomatic: 'Betrayed X'

איילת רצתה להכין לאמא שלה זר פרחים ע-נ-ק במתנה ליום ההולדת.
Ayelet wanted to prepare a huge wreath for her mother's birthday.



היא לא כל כך יודעת לסדר פרחים, אבל דני יודע להכין זרים מקסימים. איילת ביקשה את עזרתו, והוא הבטיח שיעזור.
אבל כשהגיע המועד, הוא אמר שהוא עסוק מדי.
She doesn't really know how to prepare wreaths, but Dani does it beautifully. Ayelet asked for his help, and he promised to help her. But when the day came, Dani just said he was too busy.

איילת מאוד נפגעה שחבר כמו דני הפנה לה את הגב
Ayelet was really hurt that a friend like Dani turned her back

מה זה אומר שדני הפנה לה את הגב?

א. דני שיקר לה

ב. דני לא רצה לעזור לה

ג. דני הסתובב אליה עם הגב

What does it mean that Dani turned his back on her?

- a. Dani lied to her
- b. Dani didn't want to help her
- c. Dani turned with his back facing her

מי מסדר פרחים ממש יפה?

א. אמא של איילת

ב. דני

ג. איילת

Who prepares really pretty wreaths?

- a. Ayelet's mom
- b. Dani
- c. Ayelet

4. *sovev et X al-ha-ecba ha-ktana*
turned acc X on-the-finger the-small
'Turned someone on (one's) small finger'
Idiomatic: 'Manipulated X'

דני יודע שכשהוא מתחיל לבכות ליד דינה, היא בדרך כלל עושה כל מה שהוא רוצה. היא לא אוהבת לשמוע אותו בוכה. פעם אחת, הם הלכו יחד לחנות צעצועים. דינה קנתה לחברה שלה פילון צעצוע במתנה.

Dani knows that when he starts crying around Dina, she usually does whatever he wants. She doesn't like hearing him cry. Once, they went together to a toy shop. Dina bought a gift for her friend – a toy elephant.



דני ראה את הפילון, ומיד רצה גם! דינה הבטיחה לקנות לו פילון כזה ליום ההולדת. אבל דני רצה עכשיו! ומיד פרץ בבכי, ולא הפסיק עד ש...דינה וויתרה וקנתה לו את הצעצוע.

Dani saw the elephant, and wanted one too! Dina promised to buy him a toy like this for his birthday. But Dani wanted now! He started crying right away, and didn't stop, until...Dina gave up and bought him the toy.

לפעמים, דני מצליח לסובב את דינה על האצבע הקטנה
Sometimes, Dani manages to turn Dina on the finger small

מה זה אומר: דני מצליח לסובב את דינה על האצבע הקטנה?

א. דני מצליח לגרום לדינה לעשות את מה שהוא רוצה

ב. דני מצליח להרגיז את דינה

ג. דני מצליח לגרום לדינה להסתובב סביב האצבע שלה

What does it mean: Dani managed to turn Dina on his little finger?

- a. Dani manages to make Dina do whatever he wants
- b. Dani manages to irritate Dina
- c. Dani manages to make Dina turn around her own finger

למה דני בכה?

א. כי הוא נבהל מהפילון

ב. כי הוא רוצה שיחגגו לו יום הולדת

ג. כי הוא רצה גם פילון צעצוע

Why did Dani cry?

- a. Because he became scared of the elephant
- b. Because he wanted his birthday to be celebrated
- c. Because he also wanted a toy elephant

5. *hoci et X me-ha-kelim*
took+out acc X from-the-dishes
'Took X out of the dishes'
Idiomatic: 'Irritated X'

אתמול, דני והוריו טיילו כל היום בחיק הטבע, וחזרו הבייתה מאד עייפים. שלושתם רצו לשכב לישון מייד לאחר ארוחת הערב, אבל...לשכן שלהם היו תוכניות אחרות: הוא החל לחצרץ במרץ על החצוצרה החדשה שלו.

Yesterday, Dani travelled with his parents all day long, and they returned home very tired. They wanted to go back to bed right away after dinner, but...their neighbor had other plans: he started playing on his new trumpet.



אבא של דני ביקש ממנו בנימוס להפסיק, אך השכן לא התייחס אליו. שוב ושוב אבא מבקש בנימוס, אך השכן מתעלם. בחצות, אבא כבר לא יכול היה יותר: הוא ירד לשכן, וצעק עליו שיפסיק מייד לחצרץ!

Dani's father politely asked the neighbor to stop playing, but he didn't react. Again and again Dani's father asks, politely, but the neighbor continues to ignore. At midnight, he couldn't take it anymore: he went down to the neighbor, and yelled at him to stop immediately playing the trumpet!

הרעש הנוראי הוציא את אבא מהכלים
The awful noise took dad out of the dishes

מה זה אומר: הרעש הנוראי הוציא את אבא מהכלים?

א. הרעש הנוראי גרם לאבא להפסיק לשתוף כלים

ב. הרעש הנוראי הרגיו מאוד את אבא

ג. הרעש הנוראי גרם לאבא לצאת מהבית

What does it mean: the terrible noise took father from the dishes?

- a. The terrible noise made father stop doing dishes
- b. The terrible noise really angered father
- c. The terrible noise made father leave the house

מי חצרוץ?

א. אבא של דני

ב. השכן של דני

ג. דני

Who played the trumpet?

- a. Dani's father
- b. Dani's neighbor
- c. Dani

6. *shalaf et X me-ha-sharvul*
pull+out acc X from-the-sleeve
'Pulled X out of the sleeve'
Idiomatic: 'Invented X on the fly'

הבוקר, איילת טיילה ברחוב ופגשה במקרה את דני. דני סיפר לה שהיה ממש כיף במסיבה הגדולה שהוריו ערכו לו אתמול, ושאל אותה למה היא לא באה.

This morning, Ayelet was walking down the street and accidentally met Dani. Dani told her it was great fun at the big party his parents made for him yesterday, and asked her why she didn't come.



האמת היא שאיילת פשוט שכחה! אבל היא חששה שאם תספר לדני את האמת הוא עלול להעלב. לכן היא אמרה לו: "מאוד רציתי לבוא, אבל נרדמתי מוקדם...הייתי כל כך עייפה". דני לא כעס בכלל, ואיילת שמחה.

The truth is that Ayelet simply forgot ! But she was afraid that if she told this to Dani, he might be offended. So she told him "I really wanted to come, but I fell asleep early...I was so tired." Dani wasn't mad at all, and Ayelet was happy.

היא הצליחה לשלוף תשובה מה-שרוול
She managed to take out an answer from the sleeve

מה זה אומר: איילת הצליחה לשלוף תשובה מהשרוול?

א. איילת המציאה את התשובה על המקום

ב. איילת שיקרה

ג. איילת הוציאה פתק עם התשובה מהשרוול

What does it mean: Ayelet managed to take the answer out of the sleeve?

- a. Ayelet made the answer on the spot
- b. Ayelet lied
- c. Ayelet took a note with the answer from under her sleeve

למה איילת לא הגיעה למסיבה?

א. כי היא שכחה

ב. כי היא נרדמה מוקדם

ג. כי היא כעסה על דני

Why didn't Ayelet go to the party?

- a. Because she forgot
- b. Because she fell asleep early
- c. Because she was mad at Dani

7. *heela le-X et laxac ha-dam*
raised to-X acc pressure the-blood
'Raised X's blood pressure'
Idiomatic: 'Angered/worried X'

אבא סייד מחדש את החדר של דני.
Dad painted the walls in Dani's room once again.



דני שמח והזמין את חבריו הטובים לראות את החדר. החברים התלהבו. אחר כך אחד הילדים הציע לצייר בצבעי גואש. מהר מאד כולם התלכלכו, לכלכו את הבגדים, את השולחן וגם את הקירות...אבא של דני חזר הביתה במצב רוח טוב, אבל כשנכנס לחדר של דני,

Dani was happy about it, so he invited all his friends to see the room. His friends really liked it. Later on, one of the kids suggested painting in gouache. Soon enough everyone got dirty, got their clothes dirty, got the table dirty and the walls too...Dani's father came back home in a good mood, but when he entered Dani's room,

הקירות המלוכלכים העלו לו את לחץ הדם
The dirty walls raised to him the pressure the blood

מה זה אומר שהקירות המלוכלכים העלו לאבא את לחץ הדם?

א. הדם של אבא זרם מאד מהר

ב. הקירות המלוכלכים מאוד הרגיזו אותו

ג. הקירות המלוכלכים הפחידו אותו

What does it mean that the dirty walls raised for Dani's father the blood pressure?

- a. Father's blood ran very strongly
- b. The dirty walls really upset him
- c. The dirty walls scared him

מי סייד לדני את החדר?

א. דינה

ב. אמא של דני

ג. אבא של דני

Who coloured Dani's room ?

- a. Dina
- b. Dani's mom
- c. Dani's dad

8. *hixzik et ha-rosh meal ha-mayim*
held acc the-head above the-water
'Held (one's) head above water'
Idiomatic: 'Survived despite of difficulties'

בשבוע שעבר, דינה השתתפה בתחרות כדורסל בפעם הראשונה.
Last week, Dina participated in her first ever basketball game.



היא מאד התרגשה! דינה מאד אוהבת לשחק כדורסל, וגם נהנית לשחק עם הילדים בקבוצה שלה. אבל הקבוצה המתחרה היתה מעולה. ומהר מאד, הקבוצה של דינה התעייפה והמשחק הפך להיות ממש קשה. למרות זאת, המשחק נגמר בתיקו.

She was very nervous! Dina really likes playing basketball, and also enjoys playing with the kids in her team. But the other team was excellent. Soon enough, Dina's group got tired and the game became very hard. Despite of it, it ended in a tie.

הקבוצה של דינה הצליחה להחזיק את הראש מעל המים
Dina's team managed to hold the head above the water

מה זה אומר, להחזיק את הראש מעל המים?

א. להחזיק מעמד למרות הקשיים

ב. לא לטבוע

ג. לשמור על מצב רוח טוב

What does it mean, to hold the head above the water?

- a. To hold on despite of difficulty
- b. Not to drown
- c. Continue to be in a good mood

באיזה משחק דינה שיחקה?

א. כדורסל

ב. כדורגל

ג. קלפים

Which game did Dina play?

- a. Basketball
- b. Soccer
- c. Cards

9. *hixnis et X la-tmuna*

inserted acc X to+the-picture

'Inserted X into the picture'

Idiomatic: 'Included X in the event/program'

ההורים של דינה תכננו מסיבת הפתעה ליום ההולדת שלה. הם הזמינו את כל החברים והחברות שלה, הכינו משחקים, והכי כיף – אבא של דינה החליט להתחפש לליצן!

Dina's parents planned a surprise party for her birthday. They invited all her friends, prepared games, and the best of all – her dad decided to be the party's clown!



בהתחלה הם לא רצו לספר לדני על ההפתעה כי הוא פטפטן ומספר לדינה ה-כ-ל.

At first, they didn't want to tell Dani about the surprise because he's talkative and tells Dina everything.

בגלל זה, רק כמה ימים לפני המסיבה ההורים הכניסו אותו לתמונה
Because of it, only a few days before the party they inserted him in the picture

מה זה אומר: ההורים הכניסו את דני לתמונה?

א. ההורים שיתפו אותו

ב. ההורים הצטלמו איתו

ג. ההורים ביקשו שלא יגלה את הסוד

What does it mean: parents inserted Dani into the picture?

- a. Parents shared the secret with him
- b. Parents took pictures with him
- c. Parents asked him not to tell the secret

למי היה יום הולדת?

א. לאיילת

ב. לדני

ג. לדינה

Who had a birthday?

- a. Ayelet
- b. Dani
- c. Dina

10. *harag shtey ciporim be-maka axat*

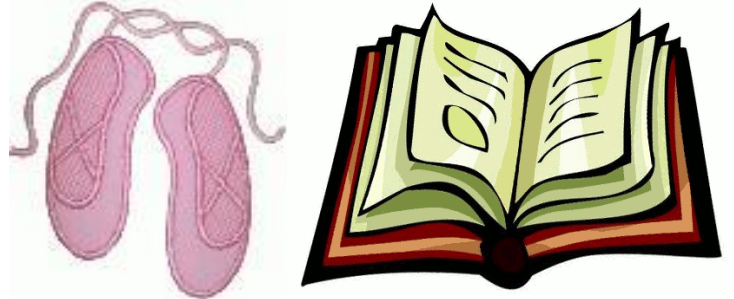
killed two birds in-hit one

'Killed two birds with one hit'

Idiomatic: 'Accomplished two goals in one action'

אתמול, דני היה צריך לקנות ספר במתנה לחבר מן הכיתה, ודינה היתה צריכה לקנות בגד בלט.

Yesterday, Dani had to buy a book for a friend from his class, and Dina had to buy a ballet outfit.



דני ביקש מאמא שתיקח אותו לחנות ספרים בדיזנגוף ודינה ביקשה ממנה שתיקח אותה לחנות לבגדי בלט בקצה השני של העיר. בשש הם היו צריכים כבר להיות חזרה בבית לביקור של סבתא. איך הם יספיקו? 'בדיזנגוף סנטר', אמרה לפתע אמא 'יש גם חנות ספרים וגם חנות לדברי בלט.

Dani asked mom to take him to the book store on Dizengoff str., and Dina asked her to take her to the dance shop at the other end of town. At six they were supposed to be back home, to see grandma. How are they going to make it? 'In Dizengoff center' suddenly said mother, 'there's a book store and a ballet store.

אם ניסע לשם נוכל להרוג שתי ציפורים במכה אחת
If we go there we can kill two birds in one hit

מה זה אומר בסיפור להרוג שתי ציפורים במכה אחת?

א. למצוא פתרון לבעיה מסובכת

ב. לעשות שני דברים בבת אחת

ג. לגרום לשתי ציפורים למות בבת אחת

What does it mean in the story to kill two birds with one hit?

- a. To find a solution for a complicated problem
- b. To do two things in one action
- c. To make two birds die at once

מה דינה רצתה לקנות?

א. דיסק

ב. ספר

ג. בגד באלט

What did Dina want to buy?

- a. CD
- b. Book
- c. Ballet garment

11. *dafak et ha-rosh ba-kir*

hit acc the-head in+the-wall

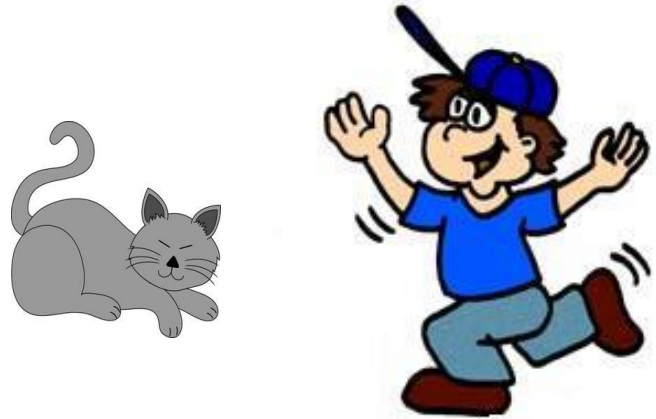
‘Hit the wall with the head’

Idiomatic: ‘Continued against all odds’

דני ראה שאיילת הצליחה ללמד את הכלב שלה לשבת ולקום: כל פעם כשהיא אמרה לו "לשבת", הכלב ישב, וכל פעם כשאמרה לו "לקום", הכלב קם. דני רצה שגם החתול שלו יידע לשבת ולקום. מהבוקר עד הערב הוא אמר לחתול "לשבת", ואז התיישב לידו, כדי להראות לחתול מה לעשות. ואז "לקום", וקם. אבל החתול לא למד.

Dani saw that Ayelet taught her dog to sit and to stand up: each time she told it to "sit", the dog sat down, and each time she told it to stand, it stood up. Dani wanted to teach his cat to sit and stand up.

From morning till evening he told his cat ‘sit’ and then sat beside it, to show it what to do. Then ‘stand up’ and stood up. But the cat didn’t learn.



אחרי כמה ימים של נסיונות בלתי פוסקים, דני הפסיק.
After a few days of useless trials, Dani stopped.

נמאס לו לדפוק את הראש בקיר
He got tired to hit the head at the wall

מה זה אומר בסיפור לדפוק את הראש בקיר?

- א. להגיד הרבה שטויות
- ב. להמשיך לעשות משהו שלא מצליח
- ג. להרביץ לקירות עם הראש

What does it mean in the story to hit the head in the wall?

- a. Tell lots of nonsense
- b. Continue doing something that doesn't work
- c. To hit the walls with the head

מה דני רצה ללמד את החתול?

- א. לאכול סוכריות
- ב. לשבת ולקום
- ג. לנבוח

What did Dani want to teach the cat?

- a. Eat candies
- b. Get up and down
- c. Bark

12. *taman et rosho ba-xol*

hid acc head+his in+the-sand

‘Hid his head in the sand’

Idiomatic: ‘Avoided dealing with the situation’

לחופשת הקיץ, דני ואיילת קיבלו משימה: לצייר ציור על החג שהם הכי אוהבים. איילת התחילה לצייר כבר ביום הראשון לחופשה.

For summer vacation, Dani and Ayelet received a task: to paint their favorite holiday. Ayelet started drawing already on the first day of the vacation.



כל יום, היא ציירה עוד קצת... אחרי כמה ימים, כבר היה לה ציור יפהפה. דני שונא לצייר, ולכן התעלם מהמשימה כל החופשה... הוא התעלם ודחה את המשימה ובסוף – לא הספיק לצייר.

Every day, she painted more and more... after a few days, she had a beautiful painting. Dani hates painting, so he ignored the task during the whole time... he continued to ignore and postpone drawing, and eventually – didn't manage to draw anything.

זו לא פעם ראשונה שדני טומן את הראש בתול

It is not the first time that Dani hides the head in the sand

מה זה אומר שדני טומן את הראש בחול?

א. דני מתעלם ממשימה לא נעימה

ב. דני משחק ומבלה

ג. דני מכניס את הראש לבוץ

What does it mean that Dani hides his head in the sand?

- a. Dani avoids doing an unpleasant task
- b. Dani plays and has fun
- c. Dani puts his head in mud

מה איילת היתה צריכה לצייר?

א. את החג שהיא הכי אוהבת

ב. את אמא ואבא

ג. את הדובי שלה

What did Ayelet have to paint?

- a. Her favorite holiday
- b. Her parents
- c. Her teddy bear

13. *sam et ha-klafim al ha-shulxan*

put acc the-cards on the-table

'Put the cards on the table'

Idiomatic: 'Told things as they are (in reality)'

דני מאוד אוהב את איילת ורוצה להיות איתה כל הזמן, אבל הוא מתבייש לספר לה על אהבתו. לפני שבוע איילת התחילה ללכת לחוג בלט פעמיים בשבוע.

Dani really loves Ayelet and wants to spent all his time with her, but he is embarrassed to tell her about it. A week ago Ayelet started doing ballet twice a week.



דני לא אוהב לרקוד, אבל הוא כל כך רצה להיות עם איילת שגם הוא נרשם לחוג. אחרי שבועיים שבהם דני סבל מכל רגע בחוג, הוא החליט לספר לאיילת שהוא נרשם לחוג רק כדי להיות איתה.

Dani doesn't like dancing, but he wanted to be with Ayelet so much that he also signed up for ballet class. After two weeks in which he suffered from every moment, he decided to tell Ayelet that he signed up for ballet only to be with her.

דני שם את הקלפים על השולחן
Dani put the cards on the table

מה זה אומר: דני שם את הקלפים על השולחן?

א. דני גילה את הכוונות שהיו לו

ב. דני הניח את קלפי המשחק על השולחן

ג. דני הפסיק את הפעילות שלו

What does it mean: Dani put the cards on the table?

- a. Dani revealed his intentions
- b. Dani put his playing cards on the table
- c. Dani stopped his activity

לאיזה חוג דני נרשם כדי להיות עם איילת?

א. לחוג מוזיקה

ב. לחוג באלט

ג. לחוג מתמטיקה

Which class did Dani take in order to be with Ayelet?

- a. Music
- b. Ballet
- c. Mathematics

14. *taman le-X pax*
concealed to-X tin
'Concealed a tin for X'
Idiomatic: 'Prepared a trap for X'

זה רוני.
This is Rony.



דני לא כל כך מחבב אותו, כי רוני אוהב לרמות את הילדים האחרים. אתמול, דני הכין שיעורי בית כשלפתע רוני צלצל אליו. "אתה יודע שמחר אין לימודים, נכון?" שאל רוני. דני לא האמין לו והמשיך ללמוד. "רוני בטח רוצה שאגיע ללא שיעורי בית מחר ואכשל במבחן!", חשב דני. אבל כשהגיע לביה"ס, הוא ראה שהכל סגור.

Dani doesn't really like him, because Rony likes tricking other kids. Yesterday, Dani was preparing home-work when suddenly Rony called him. "You do know there's no school tomorrow, right?" asked Rony. Dani didn't believe him and continued to study. "Rony probably wants me to come to school without my home-work and fail the test!" he thought. But when he came to school, he saw that everything was closed.

דני טעה, כי חשב שרוני רוצה לטמון לו פת
Dani was wrong, as he thought that Rony wants to conceal him tin

מה זה אומר שרוני רוצה לטמון לו פח?

א. הוא רוצה לשחק עם דני

ב. הוא רוצה לגרום לדני להיכשל

ג. הוא רוצה להכין פח אשפה בשביל דני

What does it mean that Roni wants to hide him a tin?

- a. He wants to play with Dani
- b. He wants to make Dani fail
- c. He wants to prepare a tin for Dani

למה דני לא מחבב את רוני?

א. כי רוני אוהב לרמות

ב. כי רוני אוהב לשחק

ג. כי רוני גר רחוק

Why doesn't Dani like Roni?

- a. Because Roni likes to cheat
- b. Because Roni likes to play
- c. Because Roni lives far away

15. *hixnis et X la-kis ha-katan*
 inserted acc X to+the-pocket the-small
 'Inserted X in the small pocket'
 Idiomatic: 'Overcame X'

רוני כל הזמן משוויץ שהוא יודע לקפוץ הכי רחוק מכולם. דני גם קופץ מאד רחוק, אבל הוא לא משוויץ אף פעם. יום אחד, רוני אמר לדני: "מי שקופץ הכי רחוק, מקבל קרמבו". דני הסכים. ילדים אחרים גם באו להשתתף בתחרות. אחד אחד, הם קופצים והמורה לספורט מודד את המרחק. רוני עקף את כולם – והיה בטוח שהקרמבו שלו. אבל אז, הגיע תורו של דני.

Rony always boasts that he can jump farthest. Dani also jumps quite far, but he never boasts. One day, Rony said Dani 'Whoever jumps father, gets a Crembo (chocolate)' Dani agreed. Other kids also came to participate in the competition. One by one, they jumped, and the sports-teacher measured the distance. Rony beat everyone and was sure that he won the Crembo. But then came Dani's turn to jump.



הוא קפץ רחוק פי שתיים מרוני והרשים את כולם.
 He jumped twice as far as Rony and impressed everyone.

דני הכניס את רוני ל**כיס** הקטן
Dani inserted Rony into the pocket the small

מה זה אומר: דני הכניס את רוני לכיס הקטן?

א. דני גבר על רוני בקלות

ב. דני שם תמונה של רוני בכיס שלו

ג. דני השתיק את רוני

What does it mean: Dani inserted Roni into the little pocket?

- a. Dani easily overcame Roni
- b. Dani put Roni's picture in his pocket
- c. Dani made Roni silent

עם מי דני התחרה?

א. עם איילת

ב. עם רוני

ג. עם המורה לספורט

Who did Dani compete with?

- a. Ayelet
- b. Roni
- c. Sport's teacher

16. *hidlik le-X nura aduma*
lighted to-X bulb red
'Lighted to X a red bulb'
Idiomatic: 'Make X suspicious'

אתמול, איילת יצאה לטייל עם הכלב בפארק. היא שמעה לב שהוא לא מתרוצץ כמו תמיד, אבל חשבה שהוא אולי עייף. כשהם חזרו הביתה, היא נתנה לו את האוכל האהוב עליו.

Yesterday, Ayelet took her dog for a walk in the park. She noticed that he doesn't run around like always, but thought he might be tired. When they came back home, she gave him his favorite food.



אבל הוא אפילו לא רצה להתקרב ולהריח את הצלחת! משהו פה מוזר, חשבה איילת, ולקחה מייד את הכלב לוטרינר.
But he didn't even want to come closer and smell the plate! Something is weird, she thought, and took him to the veterinarian right away.

חוסר התיאבון שלו הדליק לה נורה אדומה
His lack of appetite lightened her bulb red

מה זה אומר: חוסר התיאבון הדליק לאיילת נורה אדומה?

א. חוסר התיאבון הפתיע את איילת

ב. חוסר התיאבון גרם לאיילת לחשוד

ג. באור האדום איילת ראתה שהוא לא אוכל

What does it mean: lack of appetite turned to Ayelet a red bulb?

- a. Lack of appetite surprised Ayelet
- b. Lack of appetite made Ayelet suspicious
- c. Under the red light Ayelet saw that he doesn't eat

מי היה חולה?

א. הכלב של איילת

ב. החתול של איילת

ג. איילת

Who was sick?

- a. Ayelet's dog
- b. Ayelet's cat
- c. Ayelet

17. *sam et kol ha-beycim be-sal exad*

put acc all the-eggs in-basket one

‘Put all the eggs in one basket’

Idiomatic: ‘Invested all his money/efforts in one direction’

דני גילה שעוד מעט חופש פורים. הוא שמח מאד, כי הוא רצה לבלות עם איילת בגן החיות.

Dani found out that Purim vacation is very soon. He was very happy, as he wanted to spend time with Ayelet at the zoo.



ההורים הציעו לו לבוא איתם להופעה, אבל דני אמר להם שהוא רוצה להיות עם איילת כל היום. דינה הציעה לו לבוא איתה אחה"צ לסבתא, אבל גם לה הוא אמר שהוא ואיילת יהיו כל היום בגן חיות! לכולם דני סיפר על הכיף שיהיה לו ולאיילת בגן החיות. ברגע האחרון איילת הודיעה לו שהיא לא יכולה לבוא כי יש לה המון שיעורי בית. בסוף, דני נשאר בפורים לבד בבית.

His parents offered him to join them and see a performance, but he told them he wants to spend his whole day with Ayelet. Dina offered him to come with her to grandma, but to her too, he said that he and Ayelet will be spending their whole day at the zoo. Dani told everyone about the fun he's going to have with Ayelet at the zoo. At the last moment, Ayelet told him that she cannot come as she has lots of homework. At the end, Dani spent Purim alone at home.

ככה זה, זה לא טוב לשים את כל הביצים בסל אחד

That's how it is, it's not good to put all the eggs in one basket

מה זה אומר בסיפור 'לשים את כל הביצים בסל אחד'?

א. לספר לכולם את אותו הסיפור

ב. לוותר על הכל בשביל דבר אחד

ג. לקנות הרבה ביצים ולהניח את כולן יחד

What does it mean in the story 'to put all the eggs in one basket'?

- a. To tell everyone the same story
- b. To give up on everything for one thing
- c. To buy lots of eggs and place them all together

מה בסוף דני עשה בפורים?

א. בילה עם איילת

ב. בילה עם דינה

ג. נשאר לבד בבית

What did Dani end up doing on Purim?

- a. Hanged with Ayelet
- b. Hanged with Dina
- c. Stayed alone at home

18. zara *melax al ha-pcaim*
sprinkled salt on the-wounds
'Sprinkled salt on the wounds'
Idiomatic: 'Added insult to injury'

בשבוע שעבר איילת הלכה ללונה פארק, ולא הזמינה את דני. אחר כך היא התקשרה לספר לו איזה כיף היה!
Last week, Ayelet went to an amusement park, and didn't invite Dani to join her. Then he called and told him what a great fun it was!



דני מאד אוהב לבלות עם איילת, ומאד אוהב את הלונה פארק – הוא מאוד נעלב שהיא לא הזמינה אותו. אתמול דינה שמעה במקרה שאיילת נסעה לספארי, ושוב לא הזמינה את דני!

Dani really loves spending time with Ayelet, and he really loves amusement parks – he was offended that she didn't invite him. Yesterday, Dina accidentally heard that Ayelet went to Safari, and didn't invite Dani once again!

היא החליטה לא לספר לדני כי היא לא רצתה לזרות מלח על הפצעים
She decided not to tell Dani about it, as she didn't want to sprinkle salt on the wounds

מה זה אומר בסיפור 'לזרות מלח על הפצעים'?

א. לפגוע שוב במשהו כואב

ב. לשים מלח על השריטות

ג. להעליב

What does it mean in the story 'to sprinkle salt on wounds'?

a. To hurt once again in a painful spot

b. To put salt on the scratches

c. To insult

למה די נעלב?

א. כי איילת שכחה להזמין אותו

ב. כי איילת לא התקשרה אליו

ג. כי דינה דיברה עם איילת

Why was Dani insulted?

a. Because Ayelet forgot to invite him

b. Because Ayelet didn't call him

c. Because Dina talk to Ayelet

19. *raa et ha-or bi-kce ha-minhara*

Saw acc the-light at-end the-tunnel

'Saw the light at the end of the tunnel'

Idiomatic: 'Thought that the end of suffering is near'

דני ואיילת חיכו יחד לאוטובוס לבי"ס. חיכו וחיכו, והאוטובוס לא הגיע...איילת הציעה לדני ללכת ברגל במקום להמשיך לחכות. דני הסכים, והם התחילו ללכת. בהתחלה זה היה כיף, אבל לאט לאט דני התחיל להתעייף. איפה אנחנו, הוא שאל את איילת? עוד מעט נגיע, היא ענתה לו. והם המשיכו לצעוד. דני נהיה יותר ויותר עייף...הוא רצה לעצור, לשבת ולנוח. פתאום, הוא ראה מרחוק את שער בי"ס. דני שמח מאד, והמשיך ללכת במרץ.

Dani and Ayelet waited together for their school bus. They waited a long time, but the bus didn't come. Ayelet offered Dani to walk instead of waiting. Dani agreed, and they started walking. At first it was fun, but slowly Dani started getting tired. 'Where are we?' he asked Ayelet. 'We'll be there soon,' she answered, and they kept walking. Dani became more and more tired...he wanted to stop, to sit, to rest. Suddenly, he saw from afar the entrance to his school. Dani was really happy and kept walking vigorously.



דני ראה את האור בקצה המנהרה

Dani saw the light at the end of the tunnel

מה זה אומר שדני ראה את האור בקצה המנהרה?

א. הוא הבין שהוא יקבל פרס

ב. הוא שמ לב שסוף המאמץ קרוב

ג. הוא שמ לב שהמנורה דולקת בכניסה לביה"ס

What does it mean that Dani saw the light at the end of the tunnel?

- a. He realized he'll get an award
- b. He realized the end of suffering is near
- c. He realized that the light is on in the entrance to school

לאן דני ואיילת הלכו?

א. לדיזינגוף סנטר

ב. לבי"ס

ג. לבית של דני

Where did Dani and Ayelet go?

- a. To Dizengoff center
- b. To school
- c. To Dani's house

20. *hosif shemen la-medura*

added oil to+the-fire

'Added oil to the fire'

Idiomatic: 'Worsened the current situation with additional action or information'

אתמול, דני ודינה טיילו בפארק וחיפשו את פינת החי.

Yesterday, Dani and Dina were walking at the park and were looking for 'animal corner'.



דינה אמרה שהיא מכירה דרך קיצור, והם התחילו ללכת. אחרי כמה דקות, דני הרגיש שהם מתרחקים מפינת החי. "אנחנו בכלל לא בכיוון!" הוא אמר. "אני יודעת את הדרך" הבטיחה לו דינה. אחרי עשר דקות, דני עצר והשניים התחילו להתווכח. "את לא זוכרת נכון", אמר דני, "בטח שכנ' השיבה דינה..." לפתע עברה שם איילת, ושמעה את כל הסיפור. נראה לי שדני צודק, היא חשבה, אבל לא אמרה כלום.

Dina said she knew a shortcut, and they started walking. After a few minutes, Dani felt they were getting more and more distant from the 'animal corner'. 'We're in the wrong direction!' he said. 'I know the way', promised Dina. After ten minutes, Dani stopped and the two started arguing. 'You don't remember right', said Dani. 'Of course I do!' replied Dina. Suddenly, Ayelet passed them by, hearing the whole story. I think that Dani is right, she thought, but didn't say anything.

היא לא רצתה להוסיף שמן למדורה
She didn't want to add oil to the fire

מה זה אומר בסיפור 'להוסיף שמן למדורה'?

א. לגרום למדורה לבעור יותר חזק

ב. לעשות את המצב קשה עוד יותר

ג. להעליב אחרים

What does it mean in the story 'to add oil to fire'?

- a. To make the fire burn harder
- b. To make the situation even tougher
- c. To insult others

מי הלך לפינת החי?

א. דני ודינה

ב. דינה ואיילת

ג. דני, דינה ואיילת

Who went to the animal corner?

- a. Dani and Dina
- b. Dina and Ayelet
- c. Dani, Dina and Ayelet

3. Phrasal Idioms in Hebrew

Having established the stage at which children acquiring Hebrew possess the notion ‘idiom’, answering the first question of this research, let us now turn to the second question of this research, namely, how idioms are stored in the mental lexicon. Recall that chapter 1 presented the theoretical framework of this dissertation, namely, the TSS model (Horvath & Siloni 2009, 2012). Recall that in the TSS model, storage of idioms is suggested to be dependent on their type: phrasal idioms are suggested to be stored under their lexical head (i.e. head-based storage method), while clausal idioms are suggested to be stored independently from their lexical items, on a separate list (i.e. independent storage method). So far, the terms ‘clausal’ and ‘phrasal’ were defined rather loosely, as idioms which contain CP-material (e.g. the modal *can* or the negation morpheme in *can’t see the forest for the trees*, the former) and idioms which contain no such material (the latter). The distinction between these two types of idioms will be made more precise in chapter 5 – until then, the general definition above will be sufficient for our discussion.

This chapter presents the seminal study of Horvath & Siloni (2009), which provides empirical evidence supporting the head-based storage of phrasal idioms in Hebrew. Additionally, it provides empirical evidence supporting the word-based (cf. root-based) nature of the mental lexicon. As it was mentioned in chapter 1, the question which will be examined in order to establish the link between idiom storage and the structure of the lexicon pertains to the distribution of idioms across the verbal diatheses. For the reader’s convenience, the question is repeated below in (36):

36. How are idiomatic expressions distributed across the verbal diatheses?

Given an idiom headed by an unaccusative predicate, for example, the question is whether its idiomatic meaning will be obligatorily shared by other diatheses of the same predicate, or can there

be idioms which are uniquely available in a particular diathesis.¹² As it was explained in chapter 1, different storage methods make completely different predictions. Under head-based storage, there are two possibilities, depending on the amount of information encoded in the lexicon. If the lexicon consists of bare roots, with voice and category specification being added post-lexically (i.e. in the syntax) (e.g., Borer 2005; Marantz 1997; McGinnis 2002; Pylkkänen 2002; Ramchand 2006), we would expect that once an idiom exists with a certain root, it will exist with all instantiations of that root – that is, *all* its different diatheses. In contrast, if the lexicon consists of words (i.e. roots, lexical category and diathesis) (e.g., Everaert 1990; Jackendoff 1997; Reinhart 2000, 2002), we would expect to find idioms whose idiomatic meaning is *uniquely* available with a specific diathesis. Under other storage methods, as explained before, manipulation of the head of the idiom should not affect the idioms in any systematic manner. The prediction of these storage methods is therefore that we would not find any systematic effect of diathesis shift on idioms – keeping or losing their idiomatic meaning is predicted to be random with respect to diathesis.

This research question was investigated in detail in Horvath & Siloni (2009), who examined idiom distribution in Hebrew across the different diatheses. Their work is presented in detail in section 3.2. Section 3.1 takes a small detour from our main discussion into a specific case of diathesis shift, namely, the transitive-unaccusative alternation. This detour is required as the details of both Horvath & Siloni's work, as well as my own study of Russian phrasal idioms (chapter 4), will require the reader to be familiar with the terminology presented below.

3.1 The Transitive-Unaccusative Alternation

Let us take a few moments to make a detour into the history of unaccusativity. Already in the early 70's, it was noticed in the linguistic literature that the class of two-place predicates is not uniform, as

¹² The term 'unaccusative' is made more precise in the following section.

some verbs, but not others, participate in the so-called ‘Causative-Inchoative Alternation’ (e.g., Lakoff 1970). The alternation is illustrated in (37)-(38):

37. a. *John grows tomatoes in the garden*

b. *Tomatoes grow in the garden*

38. a. *John reads books in the library*

b. **Books read in the library*

Thus, while *grow* has two different uses, namely the causative (i.e. transitive) in (37a) and the inchoative (i.e. intransitive) in (37b), *read* only has the transitive use in (38a). In addition, it was noticed that the class of one-place predicates was not uniform as well, as only some predicates have transitive alternates (e.g. *grow*). For example, *jump* and *shine* do not participate in the alternation, as illustrated in (39)-(40):

39. a. *John jumped*

b. **Mary jumped John*

(Intended meaning: ‘Mary caused John to jump.’)

40. a. *The glass shined*

b. **John shined the glass (with a polish)*

Apart from the existence of a transitive alternate, Perlmutter (1978) suggested that alternating intransitive verbs like *grow*, *open* and *break* differ syntactically from non-alternating intransitive verbs like *jump*, *run* and *dance*. Specifically, he advanced the possibility that the subjects of the former are base-generated in the object position, labeling such verbs ‘unaccusatives’. The original formulation of his hypothesis is provided in (41):

41. **Unaccusativity Hypothesis**

Some subjects of one-place predicates originate in the object position

(Perlmutter 1978: (10))

Under this hypothesis, therefore, some intransitive verbs merge their subjects internally, in the object position, while others merge their subjects externally. While the Unaccusativity Hypothesis (UH henceforth) per se does not account for the contrasts above, the mere possibility of an unaccusative derivation of some intransitive verbs led to a vast amount of empirical research which could support the proposal. What types of data can support the unaccusative hypothesis? The following excerpt from Perlmutter & Postal (1984) suggests a direction: “The UH predicts that languages will have phenomena with respect to which nominals in some intransitive clauses will behave like subjects, while those in others will behave like direct objects.” (p. 97).

The first in-depth investigation of such phenomena is presented in Burzio (1986), who provides a rich set of syntactic ‘diagnostics’ of unaccusativity. These diagnostics are environments in which subjects of some intransitive predicates behave on a par with direct objects, contrasting with subjects of transitive predicates and other intransitive predicates (e.g., auxiliary selection in Romance languages, Genitive of Negation in Russian, etc.; I elaborate more on the specific diagnostics where relevant in the course of this work). Furthermore, this work was the first to explicitly utilize the UH in order to account for (37)-(40), suggesting that unaccusatives, in contrast with unergatives, are derived verbs. More specifically, they are suggested to be derived in the lexicon from their transitive counterparts. As lexical rules are allowed to have exceptions, the fact that *read* (e.g.) lacks an intransitive counterpart is hardly surprising. In addition, Burzio shows that some non-alternating predicates (i.e. lacking transitive counterparts) like *fell* behave on a par with alternating unaccusatives. The non-existence of their transitive alternates is seen as another exception, providing further support for their lexical derivation.

Despite the theoretical advancement in Burzio (1986), his work leaves it largely unclear what determines the unaccusativity or unergativity of a given verb. This gap is addressed in Levin & Rappaport-Hovav (1995), who attribute the classification of intransitive verbs into unaccusatives or

unergatives to the type of causation which is encoded by the event denoted by the verb. Specifically, unaccusatives are suggested to be ‘externally caused’, in that the event they denote cannot take place without an external participant or force. Unergatives, in contrast, are suggested to be ‘internally caused’, in that they denote events in which the argument of the verb is responsible for the event taking place. Under this proposal, therefore, it is the semantics of the verb which determines its syntactic representation. In addition, and in contrast with all previous approaches, Levin & Rappaport-Hovav acknowledge that the system as is does not derive the unaccusativity of externally caused predicates and the unergativity of internally caused predicates. In other words, the authors realize that a connection between the semantic properties and the syntactic behavior must be established. To this end, a set of linking rules is defined, their role being to map semantic participants in an event onto positions in the syntactic structure.

While this direction is an advancement of the previous approaches, it still remains to answer what exactly is meant by the rather intuitive terms ‘internal’ and ‘external’ causation. The Theta-System of Reinhart (2000, 2002) adopts a radically different approach, suggesting that the definition of the set of unaccusative verbs is tied to the thematic properties of their transitive counterparts.

Specifically, examining the transitive counterparts of alternating verbs, Reinhart (2000, 2002) observes that the thematic role assigned to their subjects is special in that it can be realized as an animated Agent (42a) or as an inanimate Cause (42b).

42. a. *John opened the window*

b. *The wind opened the window*

To capture the fact that the mental state of subjects of transitive verbs like *open* and *break* can be either relevant or irrelevant for the event, it is suggested that its lexical label is ‘Cause’ – which can

be realized either as Agent or Inanimate Cause.¹³ This thematic analysis leads Reinhart to define one-place unaccusative verbs as verbs which have a transitive alternate selecting ‘Cause’ as its external argument. The intransitive counterparts of verbs like *break* and *open* are proposed to be derived by de-causativization, which is a lexical operation manipulating thematic grids: its input is a thematic grid containing (at least) two θ -roles, one of which is Cause, and its output is the same thematic grid without this theta-role. This is schematized in (43) and exemplified in (44).¹⁴

43. $V(\theta_{1[\text{Cause}]}, \theta_2) \rightarrow V(\theta_2)$

44. *open* ([Cause], [Theme]) \rightarrow *open* ([Theme])

(Reinhart 2002: (15)-(16), slightly modified)

Thus, alternating unaccusatives like *open* are suggested to be derived from their transitive counterparts by deletion of the Cause theta-role in the transitive thematic grid. Recall, however, that some non-alternating intransitive verbs like *fall* were discovered to behave on a par with alternating unaccusatives in Burzio (1986). Their unaccusative behavior might initially appear inconsistent with the definition above, which demands a transitive alternate with a [+c] θ -role. Nevertheless, Reinhart argues that the derivations of the two types of unaccusatives do not differ. The only difference between a verb like *fall* and a verb like *open* lies in an idiosyncratic property of the transitive counterpart: in the former case, it is suggested to be a frozen entry in the lexicon – that is, an entry which exists in the lexicon, but is unable to get inserted into syntactic structure. This is supported by the observation that non-alternating unaccusative verbs in one language (e.g., *fall* in English) can be shown to have an alternate in some other language (e.g., *hipil* ‘caused-to-fall’ in Hebrew). In

¹³ The Theta-System uses feature notation to distinguish between different thematic roles. As these technical details are immaterial for our discussion, they are abstracted away from. For convenience, I continue using the familiar descriptive terms like Agent/Theme.

¹⁴ Clearly, this analysis suggests that the lexicon is an active component of grammar, and not merely a static list of morphemes. We will see empirical evidence supporting this claim in the next section of this chapter, as well as in chapters 4 and 5.

addition, Fadlon (2011) presents experimental evidence supporting the psychological reality of the postulated frozen inputs.

Let us now return to the alternation data in (37)-(40) and examine them in light of the Theta-System.

First, note that in sharp contrast with Burzio (1986), the ungrammaticality of the intransitive *read* (e.g.) is not taken to be an exception to a lexical rule, but rather a predicted consequence of the operation in the system: due to the fact that the subject of the transitive *read* is Agent, and not Cause, the verb cannot undergo de-causativization. The Theta-System also accounts for the difference between verbs like *grow* and verbs like *jump*. The former's sole Theta-role is Theme, while the latter's sole Theta-role is Agent. Unaccusative verbs, then, can be defined through their feature composition: these are one-place predicates which assign Theme to their sole-argument, derived from transitive counterparts which assign a Cause Theta-role to its subject.

While in no way exhaustive, the presentation above allows us to continue our exploration equipped with the relevant terminology: we've seen the different approaches to the study of unaccusativity, culminating in the approach of Reinhart (2000, 2002). While the works of Horvath & Siloni (2009, 2012), as well as my own study, are largely independent of the subtleties of the Theta-System, the important part to keep in mind is the proposed locus of derivation of unaccusative predicates, namely, the lexicon. Importantly, the Theta-System is not the only framework proposing a lexical derivation for unaccusative verbs. Recent years have seen extensive literature providing further support for this direction (see, for example, Chierchia 1989; Horvath & Siloni 2008; Koontz-Garboden 2009; Levin & Rappaport-Hovav 1995; Reinhart 2000, 2002; Reinhart & Siloni 2005). We will see that the distinction between predicates formed in the lexicon and predicates formed post-lexically will turn out to be crucial, and receive further support in the study of Hebrew and Russian phrasal idioms. With this in mind, let us turn to examine in detail the seminal study on Hebrew idiomatic expressions.

3.2 Horvath & Siloni (2009)

The study of Horvath & Siloni (2009) compared idiom distribution among four types of predicates:

(i) transitive verbs, (ii) unaccusative verbs, (iii) verbal passives and (iv) adjectival passives.

Specifically, it compared the existence of *unique idioms* across the different diatheses, defined in (45) below:

45. Unique idiom

- a. For intransitive predicates (e.g. unaccusatives, passives) the term *unique idiom* refers to an idiom found with the intransitive alternate but not with its transitive counterpart
- b. For transitive predicates, *unique idiom* refers to an idiom found with the transitive alternate but not with its unaccusative counterpart

Thus, idioms can be *unique* to a given diathesis, but they can also be *shared* – that is, common to several diatheses. Both types are illustrated below.¹⁵ Specifically, examples (46) and (47) illustrate two unique unaccusative idioms: both idioms in (a) are headed by unaccusative verbs; once the predicate is replaced with its transitive counterpart, as in (b), the idiomatic meaning becomes unavailable.

46. a. *nafal al oznayim arelot* (Hebrew)
fell on ears not+circumcised
Idiomatic: ‘Fell on deaf ears’

b. #*hipil et x al oznayim arelot*
fell.trans acc x on ears not+circumcised
Hypothetical: “Someone made x fall on deaf ears” (non-existing)

47. a. *xazar al arba*
returned on four
Idiomatic: ‘Came crawling’

b. **hexzir et x al arba*
returned.trans. acc x on four
Hypothetical: “Someone made x come crawling” (non-existing)

¹⁵ Classification of predicates was based on Hebrew specific diagnostics (e.g. VS word order for unaccusative predicates, etc.) in addition to morphological differences between the different voices. As this is immaterial for my presentation, I do not elaborate on it further, referring the reader to Horvath & Siloni (2009) for more details.

Idioms were categorized as ‘non-existing’ in one of the following three cases: (i) the resulting sentence was ungrammatical (marked with *) or semantically infelicitous (marked with #), or (ii) it was grammatical and felicitous, but lacked the idiomatic interpretation, or (iii) the idiomatic interpretation could, in principle, be inferred, but the idiom was found neither in idiom dictionaries nor in Google searches.

Examples (48) and (49) below illustrate two unique adjectival passive idioms. Both idioms in (a) are headed by adjectival passives and once the predicates are replaced with their transitive counterparts, as in (b), the idiomatic meaning becomes unavailable.

48. a. *dafuk ba-rosh*
knocked in+the-head
Idiomatic: ‘Stupid’

b. *dafak et x ba-rosh*
knocked acc x in+the-head
(only literal)

49. a. *axul ve-shatuy*
eaten and-drunk
Idiomatic: ‘Ate and drank to the point of satisfaction’

b. *axal ve-shata*
ate.trans. and.drunk.trans
(only literal)

Examples (50) and (51) illustrate two unique transitive idioms.

50. a. *hexzir atara le-yoshna*
return.trans crown to-oldness
Idiomatic: ‘Restored something to its previous good quality or condition’

b. *#ha-atara xazra le-yoshna*¹⁶
the-crown returned-unacc to-oldness
Hypothetical: ‘Something was restored to its previous good quality/condition’

¹⁶ It should be noted here that Hebrew speakers occasionally use *xazra atara le-yoshna* idiomatically. With language changes, it is certainly possible that idioms which were once uniquely available with the transitive diathesis will become shared by their unaccusative counterparts – nothing in the model rules this out. The data presented above refer to the original corpus searches of Horvath & Siloni (2009).

51. a. *hosif shemen la-medura*
 added.trans oil to+the-fire
 Idiomatic: ‘Worsened the current situation with additional action or information’
- b. *#shemen nosaf la-medura*
 oil got+added to+the-fire
 (only literal)

Finally, (52)-(53) illustrate two idioms which are shared by the transitive and the unaccusative diatheses: diathesis change does not affect the idiomatic meaning, which is preserved.

52. a. *nafal ba-pax*
 fell in+the-bin
 Idiomatic: ‘Was tricked’
- b. *hipil et x ba-pax*
 fell.trans acc x in+the-bin
 Idiomatic: ‘Tricked x’
53. a. *nidleka le-x nura aduma*
 lighted to-x bulb red
 Idiomatic: ‘X sensed a warning sign’
- b. *hedlik le-x nura aduma*
 lighted.trans. to-x bulb red
 Idiomatic: ‘Warned x’

Horvath & Siloni’s study involved corpus-search: first 60 predicates of each type (i)-(iv) were sampled from a Hebrew dictionary of verbs (Stern 1994), starting with a random letter. In case the type of the predicate was not listed in the dictionary (as e.g. verbal passives), they were formed from the corresponding transitive verbs. Then, each predicate was checked for its participation in unique idioms in seven idiom dictionaries (e.g., Avneyon 2002; Cohen 1999; Dayan 2004). For the sake of completeness, the study was complemented by Google-searches and judgments of 8 native Hebrew speakers. The study examined phrasal idioms only, that is, idioms headed by a lexical category of the type A or V (i.e. APs/VPs) which contained no CP material (e.g. sentential negation, modals etc.). Additionally, all the idioms lacked a (fixed) external argument. This was done in order to

allow for comparison across the different diatheses: a transitive idiom with a fixed external argument would presumably be unavailable with the unaccusative diathesis of the same verb, simply due to the fact that the latter lacks the external argument (recall the discussion in the preceding section; see also Burzio 1986; Levin & Rappaport-Hovav 1995; Reinhart & Siloni 2005, among others).

Before presenting the results, it is important to explain why the chosen methodology was a corpus search, and did not rely primarily on native speakers' judgments. Notice that the research question is whether a given idiom *exists* with the same verb in a different diathesis. Now, existence of an idiomatic meaning is a rather slippery notion: apart from cases in which the newly formed version of the idiom is ungrammatical or semantically infelicitous, the difference between an existing idiom and a non-existing one that is still comprehensible is extremely elusive. Thus, in addition to the uncontrollable difference in speakers' knowledge of idioms, deciding whether an idiom exists or not demands a more solid, quantitative, type of research. Idiom dictionaries were chosen for this reason – they provided large and stable searchable corpora. The data were complemented by Google-searches, which allowed further checking of idiom usage. In case some doubts remained, native speakers' judgments were used. The results, presented in chapter 1, are repeated below in Table 2:

54. *Table 2*

Unique Verbal Passive Idioms	Unique Adjectival Passive Idioms	Unique Unaccusative Idioms	Unique Transitive Idioms
0/60	13/60	21/60	23/60

The table above shows that the number of unique idioms Horvath & Siloni (2009) found with verbal passives – that is, idioms existing only with verbal passives – was significantly different from the number of unique idioms found with all other diatheses. Crucially, this difference was statistically significant across the board: comparing verbal and adjectival passives ($\chi^2 = 12.423$, $p < 0.001$),

comparing verbal passives and unaccusative verbs ($\chi^2 = 23.088$, $p < .0001$); finally, comparing verbal passives with transitive predicates ($\chi^2 = 26.033$, $p < .0001$). The difference between idioms headed by adjectival passives, unaccusative verbs and transitive verbs was insignificant ($\chi^2(2) = 4.313$, $p = 0.116$). That idioms were not necessarily unique is shown by the existence of shared idioms: in the corpus, 16 idioms were found to exist both with unaccusative and transitive diatheses of their verbal heads.

What do these findings show us regarding idiom storage and the architecture of the lexicon? First, the findings show that the distribution of idioms is sensitive to a particular kind of grammatical information, namely, to the diathesis of their head. This supports the suggestion that idioms are stored as a part of linguistic knowledge (and not, e.g., world knowledge), as they are affected by linguistic factors. Second, they support the head-based storage hypothesis of the TSS model, namely, the hypothesis that idioms are stored with the entry of their verbal or adjectival head.¹⁷ This hypothesis is repeated below, for the reader's convenience:

55. Head-Based Storage Hypothesis

Verb phrase idioms are stored as subentries of their matrix predicate, the lexical verb.

(Horvath & Siloni 2009: p. 16)

Let me elaborate further the specific nature of idiom representation under this storage method. If phrasal idioms are stored under their lexical heads, it means that their subparts are related via selection by their lexical head. Notably, this process of 'selection' has been independently proposed in order to explain the variation in P-selection with different verbs. In other words, this listing device has been independently proposed to be used by verbs selecting PP complements (Baltin 1989; Everart 2010). Thus, head-based storage implies using an existing, independently motivated,

¹⁷ Recall that the alternative proposal that idioms are stored with the entry of a sub-part which is not the verbal head of the idiom is also ruled out by the findings, as this proposal makes the same prediction as the independent-storage proposal, namely, is unable to account for the contrast between different diatheses found with regard to permitting unique idioms.

procedure. The reader should keep this point in mind for subsequent comparison of clausal and phrasal idioms.

The head-based storage hypothesis, presented above, has opened the way for Horvath & Siloni to account for the attested influence of particular diathesis changes on the existence of idioms. The findings, in turn, provided evidence also regarding the issue of whether the stored predicate is a word or a root. Let me elaborate on these two points, starting with the former.

If idioms are stored within the lexical entry of their head, and if, crucially, an unaccusative verb (for example) has its own lexical entry, separate from that of a transitive verb (e.g., Chierchia 1989; Horvath & Siloni 2008a, 2008b; Levin & Rappaport-Hovav 1995), the existence of unique idioms is hardly surprising: nothing rules out the possibility that an idiom will be stored with only one realization of the relevant concept. Clearly, the existence of shared idioms is also hardly surprising, since nothing rules out the possibility that an idiom will be shared by several derivationally related realizations of the relevant concept.

How to account for the finding that no idioms were uniquely headed by verbal passives, in contrast to all other diatheses? Recall that the word-based models under hypothesis (i) predict the existence of unique idioms with different diatheses, but only if the diatheses are *lexically listed*. Now, it has been independently proposed in extensive linguistic literature that verbal passives are formed from the transitive predicates post-lexically (i.e. in the syntax), in contrast to the lexically derived adjectival passives (see, inter alia, Baker, Johnson & Roberts 1989; Collins 2005; Horvath & Siloni 2008a). Additionally, as we saw in the previous section, it has been independently proposed that unaccusative predicates are derived in the lexicon and hence are stored as separate entries (see, inter alia, Chierchia 1989; Horvath & Siloni 2008a, 2008b; Koontz-Garboden 2009; Levin & Rappaport-Hovav 1995; Reinhart 2000, 2002; Reinhart & Siloni 2005). Therefore, the existence of unique idioms with adjectival passives, unaccusative verbs, as well as transitive verbs is not surprising:

under the word-based lexicon view, these exist as independent entries in the mental lexicon. The non-existence of unique idioms with verbal passives is likewise not surprising: passive verbs do not exist at all in the lexicon, hence no idiom can be listed solely with them.

Returning to root-based models of the lexicon, their proponents would need to explain why unique idioms exist in some diatheses (i.e. unaccusative, adjectival passives, and transitive verbs) but not in others (i.e. verbal passives), and at the same time to account for the existence of shared idioms.

3.3 Summary

This chapter has outlined the primary distinctions we will examine in subsequent chapters. Specifically, we have seen the thematic distinctions between the different diatheses and their suggested locus of derivation – namely, lexicon or syntax. We have also discussed the distinction between shared and unique idioms, examining the seminal study of Hebrew by Horvath & Siloni (2009). We have seen that its findings provide evidence that the lexicon is an *active* component of grammar, in the sense that it includes predicate-deriving operations, whose outputs are *words* stored in the mental lexicon. As mentioned before, this model of the lexicon runs contrary to many current approaches (e.g., Borer 2005; Marantz 1997), suggesting the necessity of further study which will examine additional languages and use additional methodological designs. With this in mind, let us turn examine the findings of a parallel corpus study conducted on Russian.

4. Phrasal Idioms in Russian

As it was mentioned in the introductory chapter 1, one goal of this dissertation is to extend the seminal study of Hebrew by Horvath & Siloni (2009) to another language. Recall that the Head-Based Storage Hypothesis is agnostic with respect to the morphological properties of a given language, pertaining instead to the thematic properties of the predicates and the internal architecture of the mental lexicon. If the division of labor between the syntax and the lexicon is parallel cross-linguistically (an assumption which will be supported by the Russian findings), we would expect other languages to behave similarly to Hebrew with respect to idiom distribution across different diatheses. Namely, we would expect to find unique adjectival passive idioms, unique unaccusative idioms, and unique transitive idioms – but crucially, no unique verbal passive idioms in other languages as well. It is particularly interesting to examine a genetically unrelated language, with a completely different morphological structure, like Russian – if similar patterns are found, they could not be explained away on genetic or morphological grounds (though see Zuckermann 2008 for an alternative view on Modern Hebrew).

Additionally, recall that another goal of this dissertation is to perform a systematic cross-linguistic study of idiomatic expressions. Thus, regardless of the specific hypotheses underlying this research (namely, the TSS model, and specifically, the Head-Based Storage Hypothesis), it strives to discover and map different types of idioms, their distribution and cross-linguistic behavior. With this in mind, let me turn to discuss the Russian study, starting with a short background on the relevant morpho-syntactic properties of Russian.

This chapter is structured as follows. In section 4.1, I present a novel study examining Russian phrasal idioms. In section 4.2, I present complementary studies designed in order to account for its unexpected finding, namely, the scarcity of unique idioms with adjectival passives. Section 4.3 focuses on a detailed examination of unique semantic drifts in sub-standard Russian, which serve as

an additional research tool on a par with unique idioms to delve into the structure of the lexicon. Finally, section 4.4 concludes this chapter, raising additional questions for future research.

4.1 Russian Corpus Study no. 1

4.1.1 Introduction

The Russian corpus study examined the distribution of unique phrasal idioms in each of the four diatheses examined in the Hebrew study, namely: (i) transitive verbs, (ii) unaccusative verbs, (iii) adjectival passives, and (iv) verbal passives.¹⁸

Identification of unaccusative predicates was based both on thematic criteria and unaccusativity diagnostics. Specifically, it was ensured that the thematic role assigned by the intransitive verbs in question was Theme (Reinhart 2000, 2002). In addition, it was ensured that they had an existing transitive alternate in the language, whose external thematic role was unspecified with respect to animacy – that is, Cause and not Agent (as discussed in section 3.1.)

Additionally, it was ensured the Theme argument was an internal argument by applying Russian-specific diagnostics for internal arguments. Two such diagnostics are the Genitive of Negation and *po*-distribution (Babby 1980; Babyonyshev 1996; Pesetsky 1982). The former is illustrated in (56)-(57) below and the latter is illustrated in (58)-(59), first with subjects and objects of transitive verbs. Specifically, it is shown in (56) that the direct object of a transitive verb *uvidet* ‘see’ can be marked either with Accusative (a) or with Genitive case (b), once the sentence includes sentential negation; the use of Genitive entails a slight shift in meaning, as can be noticed in the difference between the glosses. In contrast, the subject, which is the external argument of the very same verb, can only be marked with Nominative case (56), and cannot bear Genitive case, as shown by the ungrammaticality of (57). Similarly, in (58) it is shown that the direct object (i.e. an internal

¹⁸ The study has been conducted in the frame of BSF Grant No. 2009269 (PIs: Tal Siloni, Julia Horvath); Russian data collection was done jointly with Lola Karsenti.

argument) of a transitive verb *vruchit'* 'give' can be modified by the distributive marker *po*, while the external argument (subject) of the very same verb cannot (59).

56. a. *aktery ne uvideli cvety na scene*
 actors-**nom** NOT saw flowers-**acc** on stage
 'The actors didn't see the flowers on stage'
- b. *aktery ne uvideli cvetov na scene*
 actors-**nom** NOT saw flowers-**gen** on stage
 'The actors didn't see (any) flowers on stage'
57. **akterov ne uvidelo cvety/cvetov na scene*
 actors-**gen** NOT saw flowers-**acc/gen** on stage
58. *zriteli vruchili po cvetku kazhdomu akteru*
 viewers gave *po* flower each actor
 'Viewers gave a flower to every actor'
59. **po zritelju vruchilo cvety kazhdomu akteru*
po viewer gave flowers each actor

So far, then, we saw that both Genitive of Negation and the distributive-*po* distinguish subjects and objects of transitive verbs, being available only with the latter. Let us now turn to examine the behavior of intransitive subjects, to test suspected unergative and unaccusative predicates. As shown in (60)-(61), subjects of the verbs *rasti* 'grow' and *pridti* 'come' can be marked with either the Nominative Case (a), or the Genitive case (b), provided the sentences contain the negation marker. In other words, they behave on a par with internal arguments (i.e. direct objects) of transitive verbs with regard to permitting Genitive of Negation (see (56) above).

60. a. *griby zdes' ne rastut*
 mushrooms-**nom** here NOT grow
 'Mushrooms don't grow here'
- b. *gribov zdes' ne rastet*
 mushrooms-**gen** here NOT grow
61. a. *otvet iz polka ne prishel*
 answer-**nom** from regiment NOT arrived
 'The answer from regiment didn't arrive'

b. *otveta iz polka ne prishlo*
 answer-**gen** from regiment NOT arrived

In contrast, it is shown in (62) that subjects of unergative predicates like *pit* ‘drink’ cannot bear the Genitive case (notice the ungrammaticality of (b)), and can be marked only with the Nominative case. In other words, they behave on a par with external arguments of transitive verbs with regard to disallowing Genitive of Negation (recall (57) above). The possibility to bear Genitive of Negation, therefore, serves as a diagnostic for unaccusativity.

62. a. *v pivbarax kul’turnye ljudi ne pjut*
 in beer-halls cultured people-**nom** NOT drink
 ‘Cultured people don’t drink in beer halls’

b. **v pivbarax kul’turnyx ljudej ne pjet*
 in beer-halls cultured people-**gen** NOT drink

(Pesetsky 1982: (42)-(44))

Turning to distributive-*po*, it is shown in (63) that it can modify the subject of *rasti* ‘grow’ (a) but not the subject of *kusat’sja* ‘bite’ (b). Similarly to what was observed above with respect to Genitive of Negation, the data indicate that the subject in (a) must be an internal argument, thus identifying the verb as an unaccusative. The subject in (b), in contrast, must be an external argument, thus identifying the verb as unergative.

63. a. *po jabloku roslo na kazhdom dereve*
po apple grew on each tree
 ‘A(n) (different) apple grew on each tree’

b. **po sobake kusaetsja v kazhdoj kletke*
po dog bites in every cage
 ‘A (different) dog bites in each cage’

Distinguishing between adjectival and verbal passives is slightly more intricate, since the two are often homophonous in Russian (see, e.g., Babby & Brecht 1975; Babyonyshev 1996). Thus, the

following sentence can be interpreted either referring to the action of ‘inserting’ or the resultant state ‘inserted’:

64. *v tu dver', vmesto filenki bylo vstavleno matovoje steklo*
in that door, instead cardboard-paper was inserted frosted glass
'A frosted glass was inserted in that door, instead of a cardboard paper'

In order to avoid this potential ambiguity, I used only those verbal passives that were formed by affixing the transitive verbs with the suffix *-sja*, as shown in (66):

65. *vanja stroil dom*
Vanja built house
66. *dom stroilsja (Vanej)*
house built-pass.impf. (Vanja-instr.)
'The house was being built (by Vanja)'

This form of passive construction is unambiguously verbal, being inflected for tense and aspect.

Importantly, the suffix *-sja* is not exclusive to the passive construction, being used also in the creation of middle verbs, reflexive and reciprocal verbs, and some unaccusatives. Thus, for example, the reflexive of *brit* ‘shave’ is *britsja*, the reciprocal of *celovat* ‘kiss’ is *celovat'sja*. To make sure that the created predicates were indeed passive – and not, for example, reflexives – I used the possibility to add a *by*-phrase as a diagnostic (shown in (66)). As it is generally known, *by*-phrases (e.g. *John was hit by a car*) are compatible with verbal passives, but not with reflexives, middles, or reciprocal verbs (see, inter alia, Wasow 1977; Reinhart & Siloni 2005; Fox & Grodzinsky 1998). Each predicate affixed with *sja* was embedded in a sentence with a *by*-phrase, and only those that were judged as grammatical were included in our corpus.

Adjectival passives, while being potentially ambiguous between verbal and adjectival morphology, were tested with the criteria originally suggested for English in Wasow (1977), and modified for Russian in Karsenti (2009). One such diagnostic is the possibility of the ambiguous form to occur with verbs like *kazatsja* ‘seem’, which subcategorize for APs only, and not VPs. The subcategorization properties of *kazatsja* are illustrated in (67)-(68):

67. *vanja kazalsja ustavshym/sonnym*
vanja seemed tired/sleepy

68. **vanja kazalsja zasnul na stule*
vanja seemed fell-asleep on chair

Another diagnostic is the agreement in *phi*-features with the following nouns, which is unique to adjectival forms (as seen in (69)). Finally, I also checked for the possibility of the ambiguous form to appear pre-nominally, assuming that this position is limited to adjectival forms (Karsenti 2009). Only forms which behaved like adjectival in the relevant diagnostics were included in the study. The adjectival passive counterpart of (66) is shown in (69) and (70) (notice the agreement in *phi*-features and the pre-nominal position (69) and that the form *postrojennyj* ‘built’ can complement the verb *kazalsja* (70)).

69. a. *postrojennyj dom*
built-masc.+sgl house-masc.+sgl

b. *postrojennaja stena*
built-fem.+sgl wall-fem.+sgl

c. *postrojennyje doma*
built-masc.+pl house-masc.+pl

70. *dom kazalsja postrojennym sto let nazad*
house seemed built-instr. hundred years ago

Finally, and crucially, I wanted to make sure that when a particular form is used in an idiom, it is adjectival in that idiom. To achieve this goal, I applied the diagnostics mentioned above *also* to the particular idioms. This is illustrated below with the adjectival passive *baxnutyj* ‘banged’:

71. *baxnutyj na vsju golovu sosed*
banged on whole head neighbor
‘A crazy neighbor’

72. *misha kazalsja baxnutym na vsju golovu*
misha seemed banged on whole head
‘Misha seemed crazy’

After having outlined the various diagnostics used to classify Russian predicates, let me now present in more detail the methodology of the corpus study.

4.1.2 Methodology

Following Horvath and Siloni's study presented in the previous chapter, I randomly extracted the first 60 transitive predicates from a Russian dictionary (Evgenieva 1999); the other diatheses were either extracted from the dictionary as well (i.e. unaccusatives, adjectival passives) or when not available, were formed from their transitive alternates (i.e. verbal passives). The participation of each particular predicate in idioms was checked in a phraseological dictionary (Molotkov 1994), complemented with Google-searches and judgments of 10 native speakers.

For each predicate, it was examined whether there were any unique idioms available in a specific diathesis. For the reader's convenience, the definition of 'unique idiom' (from Horvath & Siloni 2009) is repeated below:

73. Unique idiom

- a. For intransitive predicates (e.g. unaccusatives, passives) the term *unique idiom* refers to an idiom found with the intransitive alternate but not with its transitive counterpart
- b. For transitive predicates, *unique idiom* refers to an idiom found with the transitive alternate but not with its unaccusative counterpart

In addition, it was examined whether there were any shared idioms between transitive and unaccusative diatheses of the given predicate. Since it was noticed that the letter *a* contained a multitude of loan words (e.g. *akkompanirovat* 'to accompany', *aktivizirovat* 'to activate', etc.), and since loan words are in general absent from Russian idioms, the search was started from the letter *b*. Examples (74)-(77) below illustrate the different types of idioms in Russian, according to definition in (73). Specifically, (74) illustrates unique transitive idiom; (75) illustrates unique unaccusative

idiom; (76) illustrates a shared transitive-unaccusative idiom; finally, (77) illustrates a unique adjectival passive idiom.

74. a. *vertet' xvostom*

turn tail-instr.

'Turn (one's) tail around'

Idiomatic: 'Be cunning'

b. *(ego) xvost vertitsja*

(his) tail turns-unacc

'His tail turns around'

(only literal)

75. a. *varit'sja v sobstv'ennom soku*

stew-unacc in self juice

Idiomatic: 'Work in isolation'

b. *#ego ktoto varit v (ego) sobstvennom soku*

him somebody stews.trans in (his) own juice

(Hypothetical idiomatic: 'Someone makes him work in isolation, e.g. by seclusion')

76. a. *valit'sja na plechi*

fall.unacc on shoulders

Idiomatic: 'Become an unwanted responsibility'

b. *valit' na plechi*

fall.trans on shoulders

'Make someone an unwanted responsibility'

77. a. *baxnutyj na vsju golovu*

banged.adj.pass on whole head

Idiomatic: 'Crazy'

b. **ego baxnuli na vsju golovu*

him banged-3rd.pl on whole head

(Hypothetical idiomatic: 'They drove him crazy')

Notice that while the idiomatic meaning is unavailable in (74), (75) and (77), there is no semantic or pragmatic reason for its absence. Thus, in principle, (74b) could have meant the same as (74a), namely, 'he is cunning'; in principle, (75b) could have meant 'someone is making him work alone', for example, by secluding him from the rest of the team; finally, (77) could have meant 'they drove him crazy', on a par with the seemingly similar (76). The unavailability of the idiomatic meaning in these cases cannot be explained away on semantic or pragmatic grounds, allowing us to conclude that the

idiom is unique to the predicate/idiom pairing in a particular diathesis due to an idiosyncratic lexical property.

4.1.3 Results

The results of the Russian corpus study are presented in Table 3:

78. Table 3

Unique Verbal Passive	Unique Adjectival Passive	Unique Unaccusative	Unique Transitive
Idioms	Idioms	Idioms	Idioms
0/60	1/60	10/60	7/60

Similarly to Hebrew, there were 10 unique unaccusative idioms not shared by their transitive counterparts, and 7 unique transitive idioms not shared by their unaccusative counterparts. In addition, there were 8 idioms shared by unaccusative and transitive verbs (8/60). Similarly to Hebrew, there were 0 unique verbal passive idioms. Surprisingly, though, only 1 unique adjectival passive idiom was found. The reader is referred to Appendix B at the end of this chapter for the complete list of predicates and idioms.

In contrast to Hebrew, then, the difference between verbal passives and adjectival passives was insignificant (two-tailed Fischer's Exact Test: $p=0.5$). Like in Hebrew, the difference between verbal passives and transitive verbs was significant ($\chi^2=7.434$, $p<0.05$), as well as the difference between verbal passives and unaccusative verbs ($\chi^2=12.11$, $p<0.05$). Like in Hebrew, the difference between transitive and unaccusative unique idioms was insignificant ($\chi^2=1.046$, $p=0.306$). Due to the small number of unique idioms headed by adjectival passives in the Russian sample, the difference between adjectival passives and transitive verbs was found to be significant ($\chi^2=6.988$; $p<0.05$). The difference between unique transitive idioms, unique unaccusative idioms and shared (transitive-unaccusative) idioms was insignificant ($\chi^2(2)=1.1$; $p=0.577$).

4.1.4 Discussion

The data reveal a major difference between Russian and Hebrew with respect to idiom distribution with adjectival passives. Recall that in Hebrew, there were 13 unique idioms with adjectival passives, in contrast to Russian – where only 1 such idiom was found. What could account for this discrepancy? Or, to put it differently, what could account for the seemingly small inventory of Russian unique idioms with adjectival passives? A few hypotheses come to mind:

(i) First, it could be that the choice of Russian predicates accidentally limited the array of relevant adjectives. Under this hypothesis, another corpus study starting from a different letter might reveal unique adjectival passives undetected in the specific sample presented above.

(ii) Second, it could be that idioms headed by adjectives are rare in Russian, in comparison with Hebrew. Under this hypothesis, we predict to find fewer idioms headed by underived adjectives in Russian compared to Hebrew. Derived adjectival idioms, therefore, would be rare as a consequence of this more general difference between the two languages.

(iii) Alternatively, it is possible that the use of adjectival passive forms is associated with a particular register, hence limiting their appearance in (normative) Russian dictionaries. Under this hypothesis, we would expect to find adjectival passive forms take on novel, perhaps vulgar, meanings and in general, become associated with a sub-standard register of spoken Russian. It will be interesting to examine whether these novel meanings, if indeed attested, are shared by the transitive counterparts of adjectival passives.

(iv) Finally, it is possible that the findings of Horvath & Siloni (2009) cannot be reproduced for Russian with respect to the adjectival passive diathesis. One possible reason for this could be due to them being formed in the syntax, on a par with verbal passives. While this direction runs contrary to the finding of one unique adjectival passive idiom (namely, *baxnutyj na vsu golovu* ‘crazy’ (77a)), it is possible that Russian is currently undergoing a shift from adjectival passives being formed

lexically to them being formed post-lexically, and this sole example is a ‘relic’, so to speak, of the previous state of affairs.

4.2 Additional Corpus Studies

I will now assess each of the above hypotheses in turn. Let me start with the first hypothesis, and to elaborate on the rationale behind it: it so happens that in Russian, the letter *v*, which was included in our corpus, functions as a perfective-prefix; in order to avoid possible inference and influence of perfectivity on the chosen predicates, it was decided to ignore all prefixed entries, excluding them from our list of predicates. For example, if we found a predicate like *vmeshat* ‘mix-perf.’ (*v+meshat*), it was not included in the study: the prefixed form was excluded for being derived and marked for perfectivity, and the bare form (*meshat*) was not included as it was listed under another letter, thus not being part of the original corpus. It is possible, therefore, that this methodological choice has limited the type of verbs in a way that affected the results. Specifically, it is possible that a parallel search starting with a different letter will yield completely different results.

4.2.1 Russian Corpus Study no. 2

To test this hypothesis, I conducted an additional search of 60 predicates in the same Russian dictionary (Evgenieva 1999), this time starting from the letter *k* – which does not have any function as a prefix. This search was more limited in scope, as it compared only transitive-adjectival passive pairs and transitive-verbal passive ones. The methodology was identical to that of the first corpus study. This time, though, each predicate was checked with *all* its aspectual derivatives with respect to participation in idioms. The results, however, were similar to those of the first study, namely: there were 0 unique adjectival passive idioms (0/60), 1 shared adjectival passive idiom (1/60), 2 unique transitive idioms (in the sense of being available with the transitive predicate but unavailable with the adjectival passive) (2/60) and 0 unique verbal passive idioms (0/60). The shared adjectival

passive idiom is presented in (79) below, and the unique transitive idioms are presented in (80)-(81) below:

79. a. *kinut' (kogo-to) na proizvol sud'by*
throw (someone) on arbitrariness of-fortune
Idiomatic: 'Leave someone on his own'

b. *kinutyj na proizvol sud'by*
thrown-adj.pass. on arbitrariness of-fortune
Idiomatic: 'To be left on one's own'

80. a. *lovit' (kogo-to) na slove*
catch (someone) on word
Idiomatic: 'Caused someone to promise'

b. **lovlennyj na slove*
caught on word
(Hypothetical idiomatic meaning: 'Was caused to promise')

81. a. *merit' (kogo-to) na svoj arshin*
measure (someone) on own arshin (old measuring unit)
Idiomatic: 'See through one's eyes'

b. **merennyj na svoj arshin*
measured on own arshin
(Hypothetical idiomatic meaning: 'Seen through one's eyes')

It seems, therefore, that the random choice of predicates cannot account for the scarcity of Russian adjectival passive idioms; the data moreover show that the phenomenon is not limited to *unique* adjectival passive idioms: both unique and shared adjectival passive idioms turn out to be scarce in Russian. This leaves us with the remaining three hypotheses stated at the beginning of this section.

4.2.2 Russian and Hebrew Adjectival Idioms: Comparative Study

Moving on to the second hypothesis, it could be that Russian uses adjectival idioms quite rarely in general – which would account for the observed scarcity of unique adjectival passive idioms, as well as the relative scarcity of shared adjectival passive idioms revealed in the complementary corpus study presented above. This hypothesis was checked by examining the first 500 randomly chosen idioms from a dictionary of phraseology (Molotkov 1994, pp. 29-72). In order to make sure that the

findings are extendable to Modern Russian as it is spoken today, I also examined a smaller, but more contemporary, dictionary of Russian idioms containing about 400 entries (Roze 2010). In both corpora I counted the number of idioms headed by underived adjectives (e.g. *green, old*). As predicted by the ‘scarcity hypothesis’, only 3 idioms were found to be headed by adjectives, as illustrated below:

82. *chornym po belomu*
black on white
Idiomatic: ‘Clearly’

83. *gol kak sokol*
naked as falcon
Idiomatic: ‘Very poor’

84. *proshhe parjonoj repy*
simpler steamed beet
Idiomatic: ‘Elementary’

This is in sharp contrast to 247 nominal idioms *containing* adjectives like *gazetnaja utka* ‘newspaper duck’ (idiomatic: ‘a crude lie’), *myshinaja begotnja* ‘mouse run’ (idiomatic: ‘petty intrigues, concerns’) or *belaja vorona* ‘white crow’ (idiomatic: ‘strange person’).

The question now becomes whether the situation is different in Hebrew. That is, whether there are more idioms headed by (underived) adjectival idioms. To answer this question, I examined a small Hebrew phraseological dictionary (Fruchtman, Ben-Natan & Shani 2001), containing approximately 500 idioms. Similarly to Russian, and contrary to the ‘scarcity hypothesis’, only 3 idioms were found to be headed by underived adjectives, as shown below:

85. *shaxor al gabej lavan*
black on back-of white
Idiomatic: ‘Clearly’

86. *cehubim ze le-ze*
yellow this to-this
Idiomatic: ‘Hostile to each other’

87. *kireax mi-kan ve-mi-kan*
bald from-here and-from-here
Idiomatic: 'Empty handed'

It seems, then, that this line of reasoning cannot account for the attested difference between Russian and Hebrew adjectival passive idioms. Let me now turn to the third possibility.

4.3 Unique Semantic Drifts in Russian

Before turning to evaluate this hypothesis, let me provide a few introductory words. Recall that at the beginning of Chapter 1, prior to providing a precise definition of idioms, I mentioned a related phenomenon of semantic drifts or 'special meanings'. As mentioned there, single words (i.e. mono-lexemic expressions) often acquire novel meanings, which are usually added by metaphorical extension. For example, the word *crane*, which originally referred solely to a type of bird, now refers to a type of construction equipment. With time, such 'special' meanings often become associated with the original word's core meaning(s), giving rise to polysemous words. Now, there is no question that these additional meanings need to be stored in the lexicon under the relevant word (i.e. *crane*) – regardless of whether they are perceived as part of the word's core meaning or as special, peripheral meanings. This contrasts sharply with idioms, whose storage method is subject to extensive research in this dissertation. Because of this difference, so far the two phenomena were set apart by limiting 'idioms' to multi-lexemic expressions (recall the definition in (13) in Chapter 1). However, it has been proposed in the literature that 'special' meanings of both mono-lexemic and multi-lexemic expressions share more similarities than differences (Jackendoff 1996; Marantz 1997; Sweetser 1991). In this section, I would like to continue this line of thought, focusing on these similar traits. Clearly, the definition of idioms stays as is, namely, it remains limited to multi-lexemic expressions. However, we will see how both types of 'special meanings', that is, both idioms and semantic drifts, can be used in order to shed light on the internal organization of the

lexicon, and specifically, in order to decide what kind of information is encoded with respect to the root/word distinction.

4.3.1 Adjectival Passives

Recall that we need to account for the significantly smaller number of unique adjectival passive idioms in Russian, compared with Hebrew. The intuitive rationale behind the third hypothesis is as follows: if adjectival passive forms in Russian are associated with substandard, slang-like language, it would be hardly surprising that they are rarely found in idiomatic expressions. It must be noted that the idea itself came to me while examining different adjectival passives, and realizing that they sound somewhat ‘vulgar’ or ‘slangy’ to my ear. This intuition of mine as a native speaker of Russian prompted me to conduct a systematic corpus study of adjectival passives in a sub-standard variety of Russian. Specifically, I examined a large dictionary of Russian slang (online version: <http://sleng-slovar.narod.ru>), containing approximately 1000 expressions. In addition to the dictionary, I consulted 6 native speakers of Russian (aged 17-23) for their judgments and complemented the study with Google-searches. The goal of this study was two-fold:

- (i) First, I wanted to check the intuition that indeed, adjectival forms – underived as well as passive – can carry with them novel, unpredictable, meanings. Specifically, I wanted to check the intuition that these meanings are often vulgar, associated with low register of Russian.
- (ii) Second, if indeed such novel meanings are found, I wanted to check whether they are necessarily shared with the transitive alternates of adjectival passives. In other words, I wanted to examine whether some adjectival passive forms could have ‘unique’ semantic drifts, not shared with their transitive counterparts. If such unique semantic drifts exist, this would provide support for the lexical derivation of adjectival passives. Similarly to the reasoning behind using unique idioms, if a special (novel or idiomatic) meaning is available only with the adjectival passive of a given

predicate but not its transitive alternate, this would show that the adjectival passive predicate is stored in the lexicon (along with its diathesis information).

Let me elaborate on point number (ii). In principle, meanings can shift in a variety of ways and in different directions. Consider, for example, the recent usage of the English *bad* in certain dialects to mean ‘excellent, top-notch’, or the drift of *cool* from its original meaning ‘of moderate temperature’ to its (more salient) present day meaning ‘popular, trendy’. Consider also the Russian drift of the color term *goluboj* ‘light blue’ to its (additional) meaning ‘homosexual’. All these examples illustrate the unpredictable nature of such semantic drifts. If the lexicon is indeed a living organism, composed of derived entries (and not mere roots), we would expect that certain meaning shifts would be unique to a given diathesis. In other words, we would expect to find unique novel meanings of adjectival passives, which would not be shared with their transitive verbal counterparts. If, in contrast, one assumes the lexicon to be a list of roots, any information associated with a given root – be it an idiomatic expression or a special, drifted meaning – would be expected to be shared by all the diatheses of that root. Thus, one would expect to find only shared idioms, and only shared semantic drifts.

Returning to the study of sub-standard Russian, since its focus is on the *additional* meanings of adjectival forms, invented entries – that is, entries non-existent in normative Russian – have been excluded. Thus, for example, slang adjectives like *chukavyj* ‘smart’ or *shaljavyj* ‘inexperienced’, which are non-existent (in any sense) in normative Russian, were not included in the corpus. The study of completely novel, invented, slang terms is an interesting topic which merits a thorough investigation of its own. Being unrelated to the specific inquiry of the current study, I leave it open for future research.

From this corpus of sub-standard Russian, the following entries were extracted: (i) all non-derived adjectives (e.g. *green*) with novel meanings and (ii) all adjectival passives with novel meanings.

Entries suspected as adjectival passives were subjected to the diagnostics mentioned in section 4.1.1 (i.e. embedding under *kazatsja* ‘seem’ etc.). The unambiguously adjectival entries were then compared to their transitive counterparts, in order to see which novel meanings were shared, and which were unique to the adjectival passive diathesis.

The results are as follows: 36 adjectives were found to have novel, drifted, quite unpredictable meanings. Further, and more interestingly, 18 adjectival passives were found to have *unique* novel meanings not shared with their transitive counterparts. Finally, only 3 adjectival passives were found to have novel meanings shared with their transitive counterparts. Below are a few examples: (88) illustrates an existing underived adjective with a novel meaning in substandard Russian; (89)-(91) illustrate unique novel meanings of three adjectival passives; finally, (92)-(93) illustrate shared novel meanings of two adjectival passives. The reader is referred to Appendix C at the end of this chapter for the complete list of predicates.

88. *zhirnyj*
‘fat’; novel: ‘rich’
89. a. *brityj*
‘shaven’; novel: ‘arrested’
- b. *brit’*
‘to shave’ (no meaning ‘to arrest’)
90. a. *stebannutyj*
‘stolen’; novel: ‘retarded, stupid’
- b. *stebanut’*
‘to steal’ (no meaning ‘to make retarded/stupid’)
91. a. *zadvinutyj*
‘pushed’; novel: ‘stupid, retarded’
- b. *zadvinut’*
‘push/trick’ (no meaning: ‘to make stupid/retarded’)
92. a. *vzjatyj*
‘taken’; novel: ‘arrested’

b. *vzjat'*
'to take'; novel: 'to arrest'

93. a. *kovannyj*
'forged'; novel: 'marked (e.g. cards)'

b. *kovat'*
'forge'; novel: 'to mark'

What can be learnt from these findings? First of all, they show that indeed, adjectival forms sometimes take on different meanings in non-standard usage, and this holds both for derived and underived adjectives. More importantly, the results show that these novel, drifted, meanings of adjectival passives can be *unique* to the adjectival passive diathesis. Similarly to using the very existence of unique idioms, the very existence of unique drifted meanings – in the present case, for adjectival passives – provides strong support for the word-based model of the lexicon, that is, for the idea that the lexicon contains derived entries as opposed to bare roots. Otherwise, one would expect drifted meanings (and idioms) to be common to all the diatheses of the same root, contrary to the Hebrew findings, and contrary to the Russian findings from both corpora.

Thus, the existence of unique adjectival passive meaning shifts in Russian provides additional support for the word-based model of the lexicon. In addition, their existence provides evidence against the fourth hypothesis proposed (in section 4.1.3) to account for the rare occurrence of unique adjectival passive idioms in Russian. Recall that the fourth and final hypothesis was that Russian adjectival passives are derived in the syntax, on a par with verbal passives, and contrary to other languages (e.g. Hebrew, English). The existence of meanings uniquely available with adjectival passives shows that these forms must be stored in the lexicon as separate entries. Similarly to the predictions of root-based models of the lexicon, if adjectival passives were formed in the syntax, we would predict all their meanings to be shared with their transitive alternates (other things being

equal). Contrary to this prediction, only 3 meanings were shared – and 18 were found to be uniquely available with adjectival passives.

A question which remains to be answered is why idiomatic expressions with adjectival passives are so rare in Russian. A possible direction to pursue would be to suggest that adjectival passive forms have become associated with vulgar and slangy meanings, accounting for their rare listing in the normative lexicons of Russian phraseology. I return to this point in section 5.2.4, where I examine passive forms with clausal idioms in Russian.

Ideally, one would want to compare the behavior of adjectival passive forms with verbal passives in sub-standard Russian, expecting verbal passives to always share their novel meanings with their transitive counterparts. Unfortunately, this line of research seems fruitless: as much as verbal passives ending in *sja* are rare in normative Russian, they are simply non-existent in the particular register examined here. Not one verbal passive was found in the corpus of sub-standard Russian studied here, and native speakers were reluctant to form new verbal passives from the existing transitive verbs.

4.3.2 Unaccusative and Transitive Verbs

To complement the study of semantic drifts in sub-standard Russian, I examined two additional diatheses, namely, unaccusative and transitive verbs. Based on the findings so far, we would expect to find unique semantic drifts with both types of verbs. The procedure was identical to the one used in the adjectival passive study, with the sole difference being the procedure of verb recognition.

Specifically, entries suspected as unaccusative predicates were tested by the diagnostics mentioned in section 4.1.1 (i.e. Genitive of Negation, distributive *po*, checking their transitive alternates etc.) and only the entries passing the diagnostics were included in the examined corpus. The unambiguously unaccusative entries were then compared to their transitive counterparts, in order to see which novel meanings were shared, and which were unique to the unaccusative diathesis.

Likewise, transitive verbs with Cause theta role (cf. Agent), that is, verbs that have unaccusative alternates, were compared with them in order to see which novel meanings were shared, and which were uniquely available with the former.

The results are as predicted: 10 unaccusative and 9 transitive verbs were found to have novel, unique, meanings in substandard Russian (the former are presented in Appendix C(V), the latter – in Appendix C(VI)). Among them, one transitive-unaccusative pair had both a novel unaccusative meaning, unshared with the transitive counterpart, and a novel transitive meaning, unshared with the unaccusative counterpart. Additionally, 2 transitive/unaccusative pairs were found to have shared novel meanings (presented in Appendix C(IV)). This is illustrated below: (94) illustrates a unique unaccusative semantic drift, (95) illustrates a unique transitive semantic drift and (96) illustrates a shared transitive-unaccusative semantic drift:

94. a. *gnut'sja*
bend-unacc.
Novel: 'Sit in jail'

b. *gnut'*
bend-trans. (no novel meanings)

95. a. *nagret'*
warm
Novel: 'Hit strongly'

b. *nagret'sja*
warm-up-unacc. (no novel meanings)

96. a. *shekotat'*
tickle
Novel: 'To feel the pockets of the person from whom you're about to steal'

b. *shekotat'sja*
tickle-unacc.
Novel: 'Feel that someone is touching your pockets and is about to steal'

Note that the numbers of both types of verbs are quite small, especially when compared with adjectival passives. This appears to be related to the general scarcity of verbs selecting Cause in this variety of Russian, with most verbs, novel or familiar, denoting events conducted by Agents.

4.4 Summary

To conclude, this chapter examined phrasal idioms in a language morphologically and syntactically different from Hebrew – namely, Russian. It was shown that in Russian, much like in Hebrew, there exist phrasal idioms uniquely available with those verbal diatheses that are independently argued in the literature to be lexically derived, and thus listed in the lexicon – that is, with unaccusatives, transitives or adjectival passives. Crucially, no unique idioms were found with verbal passives, the latter being known to be derived in the syntax. This is in line with the TSS model (Horvath & Siloni 2009, 2012), according to which phrasal idioms are stored as subentries of their main predicate, the lexical verb/adjective. Assuming that adjectival passives, unaccusatives and transitive verbs are stored in the lexicon as separate entries, the existence of idioms uniquely available with one of these diatheses is straightforward: since the diatheses are listed as separate lexical entries, any given idiom can become associated only with one of them. Assuming that verbal passives are not stored in the lexicon, being created in the syntactic module, the non-existence of unique verbal passives with phrasal idioms is a direct consequence of the Head-based storage hypothesis.

The main difference between Russian and Hebrew concerns the number of unique adjectival passive idioms: in contrast with Hebrew, only a few were found in the Russian corpora. Reviewing several possible explanations for this discrepancy, we have seen that adjectival passives can acquire novel, often unpredictable, meanings in sub-standard Russian. We have also seen that such meanings can be unique to the adjectival passive diathesis, that is, available only with the adjectival forms – and crucially unavailable with their transitive counterparts. This somewhat different direction, namely, examination of semantic drifts in addition to idiomatic phrasal expressions, and a systematic study

of a sub-standard variant of the Russian language, provides further support for the word-based nature of the lexicon. Further, it shows that adjectival passive forms must be lexically listed, showing that adjectival passives are formed in the lexical component of grammar in Russian as well. Continuing to examine unaccusative and transitive pairs in this sub-standard variety of Russian, we have seen further evidence for both diatheses being listed in the lexicon – namely, existence of novel meanings uniquely available with either diathesis.

This chapter raises several interesting questions for future research. For example, do all languages have as few idioms headed by underived adjectives like Russian and Hebrew? If so, why? What regulates the heading preferences of idioms? Turning to the sub-standard register of Russian, the question arises whether there are unique semantic drifts with other diatheses, such as reflexives, reciprocals and middle verbs (see Reinhart & Siloni 2005 for evidence supporting the lexical derivation of these diatheses). Based on the findings reported above, we would expect to find such unique novel meanings with other diatheses as well. Additionally, the question arises whether there are any multi-lexemic idiomatic expressions in this sub-standard variant of Russian. If so, what are their properties? Hopefully, this study provides a path to pursue these and other questions in future research.

After having examined the behavior of phrasal idioms (i.e. idioms headed by a lexical category) in both Hebrew and Russian, let us turn to examine larger idiomatic expressions, and see what they can tell us about the mental lexicon and idiom storage methods.

Appendix B: Russian Phrasal Idioms (Evgenieva, 1999)

I. Adjectival Passives

Adjective	Gloss	Unique Idioms
1. <i>balamuchennyj</i>	disturbed	
2. <i>balovannyj</i>	spoilt	
3. <i>beljonyj</i>	whitened	
4. <i>berezjhonyj</i>	saved	
5. <i>bintovanyj</i>	bandaged	
6. <i>bityj</i>	beaten	
7. <i>bodanyj</i>	butted	
8. <i>boltannyj</i>	shaken	
9. <i>borozzhonyj</i>	furrowed	
10. <i>brakovanyj</i>	defective	
11. <i>brityj</i>	shaved	
12. <i>bronirovanyj</i>	armored	
13. <i>broshennyj</i>	thrown; abandoned	
14. <i>buzhenyj</i>	awakened	
15. <i>baxnutyj</i>	banged	<p><i>baxnutyj na vsju golovu</i> banged on whole head Idiomatic: ‘Crazy’</p> <p>The transitive counterpart of the idiom is ungrammatical:</p> <p>*<i>ego baxnuli na vsju golovu</i> him banged-3rd,pl on whole head ‘They banged him on (his) whole head’</p>
16. <i>valjanyj</i>	felt	
17. <i>varjonyj</i>	cooked, boiled	
18. <i>vvjornutyj</i>	screwed in	
19. <i>vvinchennyj</i>	screwed into	
20. <i>vvjazannyj</i>	knitted in; involved	
21. <i>vdavlennyj</i>	pressed in	
22. <i>vdetyj</i>	passed through	
23. <i>vdolblenyj</i>	hollowed	
24. <i>vdoxnovljonnyj</i>	inspired	
25. <i>vedjonnyj</i>	managed, handled	
26. <i>vedomyj</i>	lead, transported	
27. <i>vezjonyj</i>	transported	
28. <i>venchanyj</i>	crowned, married	
29. <i>verbovanyj</i>	recruited	
30. <i>verchenyj</i>	rotated	
31. <i>vestimyj</i>	carried; directed	

32. <i>vzbeshenyj</i>	frenzied	
33. <i>vzbityj</i>	whipped	
34. <i>vzveshennyj</i>	weighed; suspended	
35. <i>vzvinchenyj</i>	agitated	
36. <i>vzvityj</i>	whirled; flown up	
37. <i>vzvolnovanyj</i>	worried	
38. <i>vzgromozhdjonyj</i>	piled up	
39. <i>vzlomanyj</i>	broken open	
40. <i>vzorvanyj</i>	exploded	
41. <i>vzjershennyj</i>	tousled	
42. <i>vzyskanyj</i>	recovered	
43. <i>vzjatyj</i>	taken; captured	
44. <i>vidanyj</i>	seen	
45. <i>vidimyj</i>	imagined	
46. <i>vkleennyj</i>	glued in	
47. <i>vklijopannyj</i>	riveted in	
48. <i>vklinjonnyj</i>	wedged in	
49. <i>vklijuchjonnyj</i>	switched on; included	
50. <i>vkovannyj</i>	forged	
51. <i>vkolochennyj</i>	hammered in	
52. <i>vkopanyj</i>	dug-into	
53. <i>vkolotyj</i>	stuck in	
54. <i>vkraplenyj</i>	ingrained	
55. <i>vkroennyj</i>	cut out	
56. <i>vkruhennyj</i>	screwed in	
57. <i>vkushjonnyj</i>	tasted	
58. <i>vlekomyj</i>	attracted	
59. <i>vmjotanyj</i>	swept, tacked into	
60. <i>vmeshanyj</i>	mixed in	

II. Verbal Passives

Verb	Gloss	Unique Idioms
1. <i>balamutit'sja</i>	be stirred up ¹⁹	
2. <i>balovat'sja</i>	be spoilt	
3. <i>belit'sja</i>	be whitened	
4. <i>beredit'sja</i>	be irritated	
5. <i>berech'sja</i>	be guarded	
6. <i>bintovat'sja</i>	be bandaged	
7. <i>bichevat'sja</i>	be lashed, scourged	
8. <i>blagoslovljat'sja</i>	be blessed	
9. <i>borozdit'sja</i>	be furrowed	

¹⁹ The passive verbs are given in the infinitive; their glosses (i.e. *be* + *participle*), are inaccurate in assigning a stative reading to the otherwise eventive verbal passive. The notation was adopted nonetheless, for lack of a better way to gloss infinitival verbal passives.

10. <i>boronovat'sja</i>	be bushed	
11. <i>brakovat'sja</i>	be rejected	
12. <i>brat'sja</i>	be taken	
13. <i>brosat'sja</i>	be thrown	
14. <i>budit'sja</i>	be awaken	
15. <i>budorazhit'sja</i>	be disturbed	
16. <i>buksirovat'sja</i>	be pulled	
17. <i>buravit'sja</i>	be drilled	
18. <i>burit'sja</i>	be drilled	
19. <i>valit'sja</i>	be brought down	
20. <i>valjat'sja</i>	be rolled	
21. <i>varit'sja</i>	be cooked	
22. <i>vajat'sja</i>	be chiseled	
23. <i>vbivat'sja</i>	be hammered in	
24. <i>vvergat'sja</i>	be plunged in	
25. <i>vvjortyvatsja</i>	be screwed in	
26. <i>vvinchivat'sja</i>	be screwed into	
27. <i>vvodit'sja</i>	be inserted in	
28. <i>vvozt'sja</i>	be brought in	
29. <i>vvolakivat'sja</i>	be dragged in	
30. <i>vvjazyvatsja</i>	be mixed up in	
31. <i>vdavlivat'sja</i>	be pressed in	
32. <i>vdalblivat'sja</i>	be hollowed	
33. <i>vdevat'sja</i>	be passed through	
34. <i>vdoxnovljat'sja</i>	be inspired	
35. <i>vduvat'sja</i>	be blown in	
36. <i>vdyxat'sja</i>	be inhaled in	
37. <i>vedat'sja</i>	be managed; lead	
38. <i>veztis'</i>	be carried	
39. <i>velichat'sja</i>	be praised, glorified	
40. <i>verbovat'sja</i>	be enlisted for	
41. <i>vershit'sja</i>	be directed	
42. <i>vestis'</i>	be carried on	
43. <i>veshat'sja</i>	be hanged	
44. <i>veshhat'sja</i>	be prophesied	
45. <i>vzbaltyvat'sja</i>	be stirred up	
46. <i>vzbivat'sja</i>	be whipped	
47. <i>vzbryzgivat'sja</i>	be sprinkled	
48. <i>vzveshivat'sja</i>	be weighed	
49. <i>vzvinchivat'sja</i>	be worked up	
50. <i>vzimat'sja</i>	be levied, raised	
51. <i>vznuzdyvat'sja</i>	be bridled	
52. <i>vzryvat'sja</i>	be exploded	
53. <i>vzyskivat'sja</i>	be called to account	
54. <i>vkleivat'sja</i>	be glued into	
55. <i>vklinivat'sja</i>	be wedged into	

56. <i>vključat'sja</i>	be turned on	
57. <i>vkolachivat'sja</i>	be hammered in	
58. <i>vkrapljat'sja</i>	be ingrained in	
59. <i>vkručivat'sja</i>	be screwed in	
60. <i>vlepljat'sja</i>	be stuck in	

Summary

Adjectival Passives	Verbal Passives	
1	0	Unique idioms

III. Unaccusatives

Verb	Gloss	Unique Idioms
1. <i>baxat'sja</i>	bang, fall heavily	
2. <i>batsat'sja</i>	bang	
3. <i>boltat'sja</i>	dangle, shake	<p><i>boltat'sja bez dela</i> dangle without affaire Idiomatic: 'Wander around without doing anything'</p> <p>The corresponding transitive is infelicitous:</p> <p><i>#ego kto-to boltal bez dela</i> him somebody dangled without affaire 'Somebody shook him without affaire'</p>
4. <i>brjaknut'sja</i>	crash	
5. <i>bulyxat'sja</i>	paddle, splash	
6. <i>buxat'sja</i>	fall heavily	
7. <i>valit'sja</i>	slip	<p><i>valitsja iz ruk</i> slips from hands Idiomatic: 'To be clumsy'</p> <p>The corresponding transitive is ungrammatical:</p> <p><i>*on vse valit iz ruk</i> he all throw-down from hands</p>

8. <i>valjatsja</i>	lie	<p><i>valjat'sja (u kogo-to) v nogax</i> lie (at someone) in legs Idiomatic: 'Lower oneself in front of someone else'</p> <p>The corresponding transitive lacks the idiomatic meaning:</p> <p><i>ego valjali u kogo-to v nogax</i> him rolled.3rd.pl at someone in legs 'They rolled him in someone's legs'</p> <hr/> <p><i>valjat'sja so smexu</i> lie-around from laughter Idiomatic: 'Laugh very hard.'</p> <p>The corresponding transitive is ungrammatical:</p> <p>*<i>ego eta shutka valjala so smexu</i> him this joke rolled from laughter</p>
9. <i>varit'sja</i>	cook	<p><i>varit'sja v sobstv'ennom soku</i> to stew in self juice Idiomatic: 'Work in isolation'</p> <p>The corresponding transitive is infelicitous:</p> <p>#<i>ego kto-to varit v (ego) sobstvennom soku</i> him somebody cook in (his) own juice 'Somebody cooks him in his own juice'</p>
10. <i>vdvinut'sja</i>	be pushed/moved in	
11. <i>vdet'sja</i>	be threaded	
12. <i>vernut'sja</i>	return	
13. <i>vertet'sja</i>	rotate	<p><i>vertet'sja pered glazami</i> rotate in front of-eyes 'Rotate in front of (someone's) eyes.' Idiomatic: 'To be importunate'</p> <p>The corresponding transitive lacks the idiomatic meaning</p> <p><i>ona vertit ego pered (ejo) glazami</i> she rotates him in front (of her) eyes</p>

		<p><i>vertet'sja pod nogami</i> rotate under legs Idiomatic: 'To disturb'</p> <p>The corresponding transitive lacks the idiomatic meaning:</p> <p><i>ona vertit ego pod (ejo) nogami</i> she rotates him under (her) legs</p>
		<p><i>vertet'sja kak belka v kolese</i> turn like squirrel in wheel Idiomatic: 'Toil for no reason'</p> <p>The corresponding transitive lacks the idiomatic meaning:</p> <p><i>ejo vertjat kak belku v kolese</i> her turn.3rd.pl like squirrel in wheel 'They turn her like a squirrel in a wheel'</p>
		<p><i>vertitsa na jazyke</i> rotates on tongue Idiomatic: 'Being on the tip of one's tongue'</p> <p>The corresponding transitive idiom is ungrammatical:</p> <p><i>*ona vertit slovo na jazyke</i> she rotates word on tongue</p>
14. <i>vzbit'sja</i>	fluff	
15. <i>vzboltat'sja</i>	shake	
16. <i>vzvit'sja</i>	fly up	
17. <i>vzdjornut'sja</i>	jerk up	
18. <i>vzdut'sja</i>	swell	
19. <i>vzmetnut'sja</i>	quickly rise up	
20. <i>vzorvat'sja</i>	explode	
21. <i>vit'sja</i>	twist	
22. <i>vkatit'sja</i>	roll in	
23. <i>vkleit'sja</i>	glue in	
24. <i>vklinit'sja</i>	wedge into	
25. <i>vlit'sja</i>	flow in	
26. <i>vljapat'sja</i>	stick in	
27. <i>vnedrit'sja</i>	take root	
28. <i>vognut'sja</i>	bend inwards	
29. <i>vodvorit'sja</i>	establish	
30. <i>vozvratit'ja</i>	return	
31. <i>vozrodit'sja</i>	revive	

32. <i>vozobnovit'sja</i>	begin again	
33. <i>volochit'sja</i>	drug,; trail	
34. <i>vonzit'sja</i>	pierce	
35. <i>vorotit'sja</i>	return, come back	
36. <i>vospalit'sja</i>	inflamm	
37. <i>vosplamenit'sja</i>	ignite	
38. <i>vospolnit'sja</i>	fill in	
39. <i>vossoedinit'sja</i>	reunite	
40. <i>vossozdat'sja</i>	reemerge	
41. <i>vosstanovit'sja</i>	rehabilitate oneself	
42. <i>vothnut'sja</i>	stick in, thrust in	
43. <i>vpitat'sja</i>	soak	
44. <i>vplestis'</i>	plait in	
45. <i>vpravit'sja</i>	set; tuck in	
46. <i>vputat'sja</i>	get mixed up in	
47. <i>vrashhat'sja</i>	turn	
48. <i>vrezat'sja</i>	cut into	<p><i>vrezat'sja v pamjat'</i> cut-into in memory Idiomatic: 'To be a significant event'</p> <p>The corresponding transitive is ungrammatical:</p> <p><i>*eto sobytie kto-to vrezal v ejo/svoju pamjat'</i> this event somebody cut into her/self memory 'Somebody cut this event into her/one's memory.'</p>
49. <i>vrubit'sja</i>	hew, mince	
50. <i>vskolyxnut'sja</i>	sway	
51. <i>vskryt'sja</i>	become open; come to light	
52. <i>vtjanut'sja</i>	get drawn in	
53. <i>vyvalit'sja</i>	pour out	
54. <i>vyvarit'sja</i>	get boiled out	
55. <i>vyvernut'sja</i>	come unscrewed, slip out	
56. <i>vyvetrit'sja</i>	ventilate (intr.)	
57. <i>vygnut'sja</i>	arch up	
58. <i>vygrjaznit'sja</i>	become dirty	
59. <i>vydavit'sja</i>	become squeezed	
60. <i>vydernut'sja</i>	become pulled out	

IV. Transitives

Verb	Gloss	Unique Idioms
1. <i>balovat'</i>	spoil	
2. <i>baxat'</i>	bang	
3. <i>batsat'</i>	bang, bash	
4. <i>bit'</i>	hit	<p><i>bit' baklushi</i> hit wooden-blocks Idiomatic: 'Loiter'</p> <p>The corresponding unaccusative is ungrammatical:</p> <p>*(<i>u nego</i>) <i>baklushy</i> <i>bjutsja</i> (to him) wooden-blocks hit</p> <hr/> <p><i>bit' kljuchom</i> hit key-with 'Hit with a key' Idiomatic: 'Enjoy fully'</p> <p>The corresponding unaccusative is ungrammatical:</p> <p>*<i>bilas' kljuchom</i> hit key-with</p>
5. <i>boltat'</i>	stir, shake; dangle	
6. <i>brostat'</i>	throw; leave	<p><i>brostat' slova na veter</i> throw words on wind 'Make false promises'</p> <p>The corresponding unaccusative is ungrammatical:</p> <p>*<i>slova brosjutsja na veter</i> words throw on wind</p>
7. <i>brjakat'</i>	crash down	
8. <i>bulyxat'</i>	throw in water	
9. <i>buxat'</i>	bang down	
10. <i>valit'</i>	throw down	
11. <i>valjat'</i>	roll	<p><i>valjat' duraka/van'ku</i> roll fool/cabby Idiomatic: 'Play the fool'</p> <p>The corresponding unaccusative lacks the idiomatic meaning:</p> <p><i>durak/van'ka valjaetsja</i> fool/cabby rolls</p>

		'A fool/cabby rolls (on the floor/ground)'
12. <i>varit'</i>	cook	
13. <i>vdvinut'</i>	push in, move in	
14. <i>vdet'</i>	put in, thread	
15. <i>vezti</i>	bring, take; carry	
16. <i>vernut'</i>	give back, return	
17. <i>vertet'</i>	turn, rotate	<p><i>vertet' vola</i> turn bullock Idiomatic: 'Talk nonsense'</p> <p>The corresponding unaccusative lacks the idiomatic meaning:</p> <p><i>vol vertitsja</i> bullock turns</p> <hr/> <p><i>vertet' xvostom</i> turn tail-Instr. 'Turn (one's) tail around' Idiomatic: 'Be cunning'</p> <p>The corresponding unaccusative lacks the idiomatic meaning:</p> <p><i>(ego) xvost vertitsja</i> (his) tail turns</p>
18. <i>vzbit'</i>	beat up	
19. <i>vzboltat'</i>	shake up	
20. <i>vzvesit'</i>	weigh	
21. <i>vzvit'</i>	raise	
22. <i>vzdjornut'</i>	hitch up	
23. <i>vzdut'</i>	blow up	
24. <i>vzmetnut'</i>	fling up	
25. <i>vzorvat'</i>	explode	
26. <i>vit'</i>	twist, weave	<p><i>vit' verjovki</i> twist ropes Idiomatic: 'Fool someone'</p>

		The corresponding unaccusative lacks the idiomatic meaning: <i>verjovki v'jutsja</i> ropes twist 'The ropes twist (around)'
27. <i>vkatit'</i>	roll in	
28. <i>vkleit'</i>	glue in	
29. <i>vklinit'</i>	wedge in	
30. <i>vkolot'</i>	pin in	
31. <i>vlit'</i>	pour in; infuse	
32. <i>vljapat'</i>	stick in	
33. <i>vnedrit'</i>	introduce	
34. <i>vognut'</i>	bend or curve inwards	
35. <i>vodvorit'</i>	settle; establish	
36. <i>vozvratit'</i>	return	
37. <i>vozrodit'</i>	regenerate, revive	
38. <i>vozobnovit'</i>	renew	
39. <i>volochit'</i>	drag	
40. <i>vonzit'</i>	plunge, thrust	
41. <i>voplotit'</i>	embody; incarnate	
42. <i>vorotit'</i>	turn	
43. <i>vospalit'</i>	inflamm	
44. <i>vosplamenit'</i>	set on fire	
45. <i>vospolnit'</i>	fill up	
46. <i>vossoedinit'</i>	reunite	
47. <i>vossozdat'</i>	reestablish	
48. <i>vosstanovit'</i>	restore, renew	
49. <i>votknnut'</i>	stick in, thrust in	
50. <i>vpitat'</i>	absorb, take in	
51. <i>Vplesti</i>	plait in	
52. <i>vpravit'</i>	set, tuck in	
53. <i>vputat'</i>	entangle, involve, implicate	
54. <i>vrashhat'</i>	turn, rotate	
55. <i>vrezat'</i>	cut in, set in, engrave	
56. <i>vrubit'</i>	hew, mince	
57. <i>vskolyxnut'</i>	stir; stir up	
58. <i>vskryt'</i>	open; reveal	
59. <i>vtjanut'</i>	draw in	
60. <i>vyvalit'</i>	throw out	

Summary

Unaccusatives	Transitives	
10	7	Unique idioms

V. Transitive-Unaccusative Shared Idioms

Verb	Gloss	Shared Idioms
1. <i>balovat'</i>	spoil	
2. <i>baxat'</i>	bang	
3. <i>batsat'</i>	bang, bash	
4. <i>bit'</i>	hit	
5. <i>boltat'</i>	stir, shake; dangle	<i>boltat' jazykom</i> wiggle tongue-Ins. 'Wiggle with the tongue' Idiomatic: 'Talk rubbish' <i>u nego jazyk boltajetsja</i> to him tongue wiggles-unacc. 'He talks rubbish'
6. <i>brosat'</i>	throw; leave	
7. <i>brjakat'</i>	crash down	
8. <i>bulyxat'</i>	throw in water	
9. <i>buxat'</i>	bang down	
10. <i>valit'</i>	throw down	<i>valit' s bol'noj golovy na zdorovuju</i> throw from sick head on healthy Idiomatic: 'Turn the unguilty into guilty' <i>svalilos' s bol'noj golovy na zdorovuju</i> throw-unacc from sick head on healthy 'UngUILTY turned guilty'
11. <i>valjat'</i>	roll	
12. <i>varit'</i>	cook	
13. <i>vdvinut'</i>	push in, move in	
14. <i>vdet'</i>	put in, thread	
15. <i>vezti</i>	bring, take; carry	
16. <i>vernut'</i>	give back, return	
17. <i>vertet'</i>	turn, rotate	
18. <i>vzbit'</i>	beat up	
19. <i>vzboltat'</i>	shake up	
20. <i>vzvesit'</i>	weigh	
21. <i>vzvesti</i>	raise	<i>vzvesti napraslinu na kogo-to</i> to-raise nonsense on someone Idiomatic: 'Spread rumors' <i>tam na nego vzvelas' napraslina</i>

		there on him raised-unacc nonsense 'There were spread rumors about him'
22. <i>vzdjornut'</i>	hitch up	<i>vzdernut' nos</i> hitch-up nose Idiomatic: 'Act snobbishly' <i>u nego nos vzdernulsja</i> to him nose hitched-up 'He acts snobbishly'
23. <i>vzdut'</i>	blow up	
24. <i>vzmetnut'</i>	fling up	
25. <i>vzorvat'</i>	explode	
26. <i>vit'</i>	twist, weave	
27. <i>vkait'</i>	roll in	
28. <i>vkleit'</i>	glue in	
29. <i>vklinit'</i>	wedge in	
30. <i>vkolot'</i>	pin in	
31. <i>vlit'</i>	pour in; infuse	
32. <i>vljapat'</i>	stick in	
33. <i>vnedrit'</i>	introduce	
34. <i>vognut'</i>	bend or curve inwards	
35. <i>vodvorit'</i>	settle; establish	
36. <i>vozvratit'</i>	return	
37. <i>vozrodit'</i>	regenerate, revive	
38. <i>vozobnovit'</i>	renew	
39. <i>volochit'</i>	drag	<i>ele nogi volochit</i> barely feet drag 'Barely drags his feet' Idiomatic: 'Exhausted' <i>u nego ele nogi volochatsja</i> to him barely feet drag-unacc 'He's exhausted'
40. <i>vonzit'</i>	plunge, thrust	
41. <i>voplotit'</i>	embody; incarnate	
42. <i>vorotit'</i>	turn	
43. <i>vospalit'</i>	inflamm	
44. <i>vosplamenit'</i>	set on fire	
45. <i>vospolnit'</i>	fill up	
46. <i>vossoedinit'</i>	reunite	
47. <i>vossozdat'</i>	reestablish	
48. <i>vosstanovit'</i>	restore, renew	
49. <i>votknnut'</i>	stick in, thrust in	
50. <i>vpitat'</i>	absorb, take in	
51. <i>vplesti</i>	plait in	
52. <i>vputat'</i>	entangle, involve, implicate	
53. <i>vrashhat'</i>	turn, rotate	
54. <i>vrezat'</i>	cut in, set in, engrave	
55. <i>vrubit'</i>	hew, mince	
56. <i>vskolyxnut'</i>	stir; stir up	
57. <i>vskryt'</i>	open; reveal	

58. <i>vtjanut'</i>	draw in	
59. <i>vybit'</i>	kick-out	<i>vybit' iz kolei</i> kick-out from gauge Idiomatic: 'Cause one to change one's routine'
		<i>vybit'sja iz kolei</i> kick-out-unacc from gauge 'To change one's routine'
60. <i>vyvesti</i>	take out	<i>vybit' iz sil</i> kick-out from power Idiomatic: 'Exhaust someone'
		<i>vybit'sja iz sil</i> kick-out-unacc from power
		<i>vyves'ti iz sebja</i> take-out from oneself Idiomatic: 'Piss someone off'
		<i>vyjti iz sebja</i> go-out of oneself 'To become pissed'

Summary

Unaccusative-Transitive	
8	Shared Idioms

Appendix C: Semantic Drifts in Sub-Standard Russian

I. Underived Adjectives

Adjectives	Literal	Novel Idiomatic Meaning
1. <i>bezglazyj</i>	eye-less	w/o documents
2. <i>bogatyj</i>	rich	old
3. <i>bol'noj</i>	sick	arrested
4. <i>vislouxij</i>	ear-ed	clumsy
5. <i>voroshnyj</i>	thief-ed	imprisoned
6. <i>goluboj</i>	light-blue	homosexual
7. <i>darmovoj</i>	free	pants' back pocket
8. <i>zhguchij</i>	burning	brave
9. <i>zheltyj</i>	yellow	informer
10. <i>zhirnyj</i>	Fat	rich
11. <i>zelenyj</i>	green	new
12. <i>zolotoj</i>	gold	jewelry store
13. <i>zubatyj</i>	teethed	a policeman
14. <i>krasivyj</i>	beautiful	orphan
15. <i>krasnoperyj</i>	red-feathered	policeman
16. <i>krylatyj</i>	winged	high-caliber robber
17. <i>krjuchkovatyj</i>	hooked	bribed
18. <i>lapshevyj</i>	noodled	bad
19. <i>levyj</i>	left	obtained dishonestly
20. <i>lysyj</i>	bald	convicted for a long time
21. <i>malokalibernyj</i>	light-calibered	adolescent criminal
22. <i>malokrovnyj</i>	little-blooded	quickly drunk
23. <i>moxnatyj</i>	fluffy	rich
24. <i>mutnyj</i>	dull	suspected
25. <i>neschastnyj</i>	unlucky	living under fake documents
26. <i>okruglennyj</i>	rounded	passive homosexual
27. <i>polnokrovnyj</i>	full-blooded	rich
28. <i>polugolodnyj</i>	half-starving	new thief
29. <i>privjazannyj</i>	tied	trolleybus
30. <i>pushystyj</i>	feathered	a member of the community
31. <i>seryj</i>	grey	first time criminal
32. <i>sladkij</i>	sweet	rich
33. <i>sluchajnyj</i>	haphazard	a newbie
34. <i>solennyj</i>	salty	Armenian
35. <i>ushatyj</i>	eared	clumsy
36. <i>chistyj</i>	clean	cash

II. Adjectival Passives: Unique Semantic Drifts

Adjectival Passive	Literal	Unique Novel Meaning	Transitive Verb
1. <i>bityj</i>	hit	pickpocketed	<i>bit'</i> (hit)
2. <i>brityj</i>	shaven	arrested	<i>brit'</i> (shave)
3. <i>dyrjavyj</i>	hollowed	a type of homosexual practice	<i>dyrjavit'</i> (hollow)
4. <i>zadvinutyj</i>	pushed	stupid, retarded	<i>zadvinut'</i> (push/trick)
5. <i>zazhatyj</i>	clasped	imprisoned	<i>zazhat'</i> (clasp)
6. <i>zakaznoj</i>	ordered	honest, true	<i>zakazat'</i> (order)
7. <i>zapjatnannyj</i>	stained	stolen/risky	<i>zapjatnit'</i> (stain)
8. <i>kaljonnyj</i>	roasted	convicted	<i>kalit'</i> (roast)
9. <i>kruchennyj</i>	swirled	prankish	<i>krutit'</i> (swirl)
10. <i>kopchennyj</i>	smoked	negro	<i>koptit'</i> (smoke)
11. <i>nashpigovannyj</i>	stuffed	knowing a lot	<i>nashpigovat'</i> (stuff)
12. <i>obezcenennyj</i>	value-less	stolen	<i>obezcenit'</i> (render valueless)
13. <i>obrazovannyj</i>	educated	committing crime once again	<i>obrazovat'</i> (educate)
14. <i>poreshennyj</i>	killed	convicted	<i>poreshyt'</i> (kill)
15. <i>razmennyj</i>	traded/killed	befriending everyone	<i>razmenjat'</i> (trade/kill)
16. <i>rodenyj</i>	born	old and experienced thief	<i>rodit'</i> (give birth to)
17. <i>stuknutyj</i>	hit	mentally unhealthy	<i>stuknut'</i> (hit)
18. <i>stebannutyj</i>	stolen	retarded	<i>stebanut'</i> (steal)

III. Adjectival Passives: Shared Semantic Drifts

Adjectival Passive	Literal	Shared Novel Meaning	Transitive	Novel Meaning
1. <i>vzjatyj</i>	taken	arrested	<i>vzjat'</i> (take)	<i>arrest</i>
2. <i>kovannyj</i>	forged	marked (e.g. cards)	<i>kovat'</i> (forge)	<i>mark</i>
3. <i>kreshhennyj</i>	christened	judged	<i>krestit'</i> (christen)	<i>judge</i>

IV. Transitive-Unaccusative Shared Semantic Drifts

Unaccusative	Literal	Shared Novel Meaning	Transitive	Novel Meaning
1. <i>vyrubit'sja</i>	shut down	lose one's conscience	<i>vyrubit'</i> (shut down)	hit until one loses one's conscience
2. <i>shekotat'</i>	tickle	to feel the pockets of the person from	<i>shekotit'sja</i> (be tickled)	feel that someone is touching your

		whom you're about to steal		pockets and is about to steal
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V. Unique Unaccusative Semantic Drifts

Unaccusative	Literal	Unique Novel Meaning	Transitive
1. <i>bit'sja</i>	hit around	play card games	<i>bit'</i> (hit)
2. <i>gasit'sja</i>	to be put out	hide	<i>gasit'</i> (put out; kill)
3. <i>gnut'sja</i>	bend	sit in jail	<i>gnut'</i> (bend)
4. <i>kapat'</i>	drip	inform (on someone)	<i>kapat'</i> (pour)
5. <i>krutit'sja</i>	whirl around	depend on someone	<i>krutit'</i> (whirl; prosecute a case)
6. <i>otkluchit'sja</i>	turn off	become drunk	<i>otkluchit'</i> (turn off)
7. <i>padat'</i>	fall	sit	--
8. <i>plyt'</i>	float	be in jail	--
9. <i>sorvat'sja</i>	tear away	go out of jail	<i>sorvat'</i> (tear away; make a robbery without leaving any marks)
10. <i>sushit'sja</i>	dry	to be in isolation cell	<i>sushit'</i> (dry)

VI. Unique Transitive Semantic Drifts

Transitive	Literal	Unique Novel Meaning	Unaccusative
1. <i>gasit'</i>	put out	kill	<i>gasit'sja</i> (to be put out; hide)
2. <i>krutit'</i>	whirl	prosecute a case	<i>krutit'sja</i> (whirl around; depend on someone)
3. <i>nagret'</i>	warm	hit strongly	<i>nagret'sja</i> (warm up)
4. <i>oplesti</i>	weave	trick someone	<i>oplestis'</i> (weave around)
5. <i>razbit'</i>	break	reveal a secret	<i>razbit'sja</i> (break)
6. <i>sbit'</i>	throw off	save money	<i>sbit'sja</i> (be thrown off)
7. <i>sorvat'</i>	tear away	make a robbery without leaving any marks	<i>sorvat'sja</i> (tear away; go out of jail)
8. <i>stukat'</i>	hit	inform on someone	<i>stukat'sja</i> (be hit)
9. <i>shatat'</i>	rock	eat	<i>shatas'sja</i> (rock)

5. Clausal Idioms

Until now, the study has evolved around the properties of phrasal idioms and semantic drifts in Russian and Hebrew. It was shown that their distribution across different diatheses supports the head-based storage hypothesis in both languages. This chapter shifts the focus to more elaborate idiomatic expressions, referred to as ‘clausal’ idioms, and defined more precisely below. Recall that the TSS model (Horvath & Siloni 2009, 2012) suggests that clausal idioms, in contrast with phrasal idioms, are stored on an independent list (as it was presented in chapter 1). The goal of this chapter is two-fold: first, to support the suggested distinction between the two types of idiomatic expressions by examining clausal and phrasal idioms in Russian and Hebrew, and second, to examine the predictions made by the independent-storage hypothesis for clausal idioms in both languages. This chapter is structured as follows. In section 5.1, I present the study of Horvath & Siloni (2012), which sets forward the distinction between clausal and phrasal idioms. We will examine the theoretical reasons behind the proposed distinction, as well as the predictions of the TSS model with respect to phrasal and clausal idioms cross-linguistically. In section 5.2, I present in detail a comprehensive corpus study in Hebrew and Russian which investigates clausal idioms and compares their behavior with that of phrasal idioms. Section 5.3 concludes this chapter and raises additional questions for future research.

5.1 The TSS Model: Horvath & Siloni (2012)

5.1.1 Clausal Idioms: Definition

The TSS Model defines ‘clausal idioms’ as idiomatic expressions that include sentential functional material (e.g., a fixed tense or mood, a modal, negation, CP-material etc.) A few English examples are provided below.

97. *Cry me a river!*

98. *Can't see the forest for the trees*

99. *What's eating him?*

(Horvath & Siloni: (6))

The sentences above are idiomatic expressions, that is, expressions which are both conventional and figurative (recall the definition in (13), chapter 1), with a more elaborate structure than that of phrasal idioms. This is evident from the fixed mood (i.e. imperative) in (97), obligatory sentential negation in (98) and the obligatory presence of a *wh*-element in (99).

Clausal idioms, then, are defined as idioms that obligatorily contain one (or more) of the following: (i) sentential negation, or, alternatively, [-NEG] feature – that is, they are either obligatorily negative or obligatorily affirmative, (ii) fixed tense or mood, (iii) a modal. These properties can be used as diagnostics to distinguish between clausal and phrasal idioms. Let me illustrate this point with the help of a few Russian and Hebrew examples.

It is shown in the Russian example (100) that sentential negation is an indispensable part of the idiom – once removed, as in (b), the idiomatic meaning becomes unavailable. Note that removing the negation does not render the idiomatic meaning implausible, as the resulting expression could have meant, in principle, 'he did something'. That is, its unavailability cannot be explained away on semantic or pragmatic grounds. In contrast, the idiom in (101) can be used both with and without the negation, showing that it is not an obligatory component of the idiomatic meaning. Therefore, (100) is an idiom obligatorily containing sentential material (i.e. negation), hence classified as clausal, while the apparently similar (101) is classified as a phrasal idiom, as the negation is not an obligatory part of the fixed expression.

100. a. *on brovju ne povel* (Russian)
 he eyebrow not moved
 Idiomatic: ‘He did nothing’
- b. *on brovju povel*
 he eyebrow moved
 ‘He moved his eyebrow’ (no idiomatic meaning)
101. a. *eto jemu ne po karmanu*
 this to-him not by pocket
 Idiomatic: ‘He can’t afford this’
- b. *eto jemu po karmanu*
 this to-him by pocket
 Idiomatic: ‘He can afford this’

Similarly, in (102) we see that the Hebrew idiom *mayim shketim xodrim amok* ‘things done softly and in low volume stay longer’ can only be used in the present tense. When its tense is altered, as in (b), the expression loses its idiomatic meaning and the sentence becomes infelicitous. Note that these tense alternatives are compatible with the idiom’s semantics, which in principle could have meant ‘things done softly will stay/stayed longer’. Thus, (present) tense is an obligatory part of the idiomatic meaning of this idiom, rendering it a clausal idiom. In contrast, the idiom in (103) can be used in all tenses without losing its idiomatic meaning (b), rendering it a phrasal idiom.

102. a. *mayim shketim xodrim amok* (Hebrew)
 water quiet enter deep
 Idiomatic: ‘Things done softly and in low volume stay longer’
- b. *#mayim shketim xadru/yaxderu amok*
 water quiet entered/will+enter deep
103. a. *yarad lo ha-asimon*
 went+down to+him the-token
 Idiomatic: ‘He understood’
- b. *yired/yored lo ha-asimon*
 will+go+down/goes+down to+him the token
 Idiomatic: ‘He will understand/understands’

Let us now return to the question of storage and raise it once again, this time with respect to clausal idioms.

5.1.2 Clausal Idioms: Storage

In chapters 3 and 4 we have seen robust empirical evidence supporting the head-based storage of phrasal idioms in both Hebrew and Russian. As it was mentioned in the introductory chapter of this dissertation, Horvath & Siloni show that there are good reasons to adopt a different storage method for clausal idioms. Let us see why.

If clausal idioms are a projection of their functional head, it is unappealing to suggest that they are stored under the relevant functional head, due to the independently known differences between functional and lexical material. Specifically, it is well known that functional categories are a closed class of entries, with little descriptive content and no thematic relation to their complements.

Furthermore, it is well known – and can be readily observed by native speakers – that it is extremely rare that a new functional category is added to any language, their addition being a slow diachronic process. In contrast, lexical categories belong to an open class of items, with thematic relations central to their meaning and with novel entries being added frequently (Abney 1987; Emonds 2000).

These distinctions even led some researchers to propose the existence of two separate sub-lexicons: one containing functional material, and the other containing lexical material (e.g., Emonds 2000).

Since idioms, in their very essence, have descriptive content on a par with lexical items, it would be unreasonable to store them under functional heads, which are essentially devoid of descriptive meaning. Further, since new idioms are added to speakers' lexicons throughout their lives, it would be unreasonable to store them in a place reserved for a few fixed functional categories. In other words, it would be unreasonable to suggest that an idiom like *What's eating him?* is a sub-entry of the C(omplementizer) morpheme.

Thus, it is unappealing to suggest that clausal idioms are stored under their functional heads. An alternative instantiation of the Head-based storage hypothesis could be that clausal idioms, on a par with phrasal idioms, are stored under their main lexical predicate. Under this proposal, then, the English idiom *Cry me a river!* will be stored under *cry*, and the idiom *What's eating him?* will be stored under *eat*. While this direction might seem more appealing than the one considered above, given that functional material has been taken to be an extended projection of the lexical head (Grimshaw 1991), empirical evidence shows that it's also an unlikely scenario. Consider the Russian sentences below:

104. *vsjako lyko v stroku*
 any tree-bark in weave-line
 Literal: 'Any tree-bark is good for weaving'
 Idiomatic: 'Anything will do'
105. *ushki na makushke*
 ears on crown
 Literal: 'He/she has his/her ears on the crown of her/his head'
 Idiomatic: 'Keep an ear to the ground'
106. *delo v shljape*
 thing in hat
 Literal: 'The thing's in the hat'
 Idiomatic: 'All is going to be ok'

What is common to all these expressions is the absence of a lexical head. Since in Russian the present tense copula can be phonologically null, the above are well-formed clausal idioms which are not headed by any lexical item. That they are indeed clausal idioms is evident from their being able to appear as embedded clauses, as illustrated below with the idiom in (107):

107. *ne volnujsja, oni skazali chto delo v shljape*
 not worry they said that thing in hat
 Literal: 'Don't worry, they said that the thing's in the hat'
 Idiomatic: 'Don't worry, they said that all is going to be ok'

Clausal idioms like these, then, wouldn't be able to be stored by the head-based storage method, as they are not lexically headed. It seems, therefore, that head-based storage is unsuitable for clausal

idioms. In the TSS Model, clausal idioms are suggested to be stored independently from their subparts, on a separate list. This hypothesis is presented in (108) below.

108. **Independent Storage Hypothesis**

An idiom that is not headed by a lexical category gets stored as a single unit listed as an independent lexical entry

(Horvath & Siloni: (9))

The hypothesis is formulated in this particular way in order to include headless idioms like the Russian examples above, and in addition, a small class of structure-less idioms like the English *happy go lucky* or *trip the light fantastic*. Having no functional and no lexical head, these idioms clearly must be stored on a separate list. Though lacking syntactic structure, and moreover, violating general principles of syntactic structure, the word order of such idioms is fixed. Based on the peculiar properties of such idioms, Horvath & Siloni suggest that clausal and structure-less idioms are stored as ‘single autonomous units’ with specification of the linear order but no syntactic structure.²⁰ Thus, phrasal and clausal idioms are suggested to differ in their manner of storage. This distinction allows us to make a few specific predictions regarding the behavior and distribution of both types of idioms, to which I turn in the next subsection.

5.1.3 Independent Storage Hypothesis: Predictions

If clausal idioms are stored as structure-less units on a separate list, and phrasal idioms are stored under their lexical heads, several precise and systematic differences are predicted to be found between the two types of idioms. Let me present and explain each in turn.

A. First, if phrasal and clausal idioms are two distinct types of idiomatic expressions, we would expect their distribution to differ significantly. That is, we would expect to find a quantitative

²⁰ While such structure-less idioms are rare, they certainly demand a thorough investigation. Since the focus of my work is clausal and phrasal idioms, I leave the discussion of structure-less idioms for future research.

difference supporting the suggested qualitative difference. Let us see why. Recall first that the corpus studies on both Russian and Hebrew found no unique idioms with verbal passives. This suggests that the mechanism of independent storage is not freely available. If it were, we would expect to find unique idioms with verbal passives – these could, in principle, be stored on a separate list, together with clausal idioms. Their non-existence suggests that the independent storage method is more marked than the head-based storage method, suggesting in turn that clausal idioms will be rarer than phrasal idioms. Thus, we expect to find significantly less clausal idioms than phrasal idioms in both Russian and Hebrew.

This prediction is also in line with the proposed mechanism for idiom specification for phrasal idioms, as mentioned at the end of chapter 3. Specifically, recall that it was suggested that idiom selection is determined by the same mechanism that determines the specific P selected by each verb for its PP complement(s). This mechanism is labeled ‘l-selection’ (Baltin 1989) and is motivated on grounds independent of idiom storage. This contrasts with the mechanism of independent storage, which appears to be needed solely in order to accommodate clausal and structure-less idioms. If so, the independent storage mechanism is more marked than the head-based storage mechanism, hence would be expected to be used less easily. This provides another pillar to support the prediction that clausal idioms will be less frequent than phrasal idioms.

B. Further, if clausal idioms are stored as structure-less strings, we would expect their syntactic rigidity to differ from that of phrasal idioms. Specifically, we would expect them to be less available for syntactic permutations, like internal modification and word order variations, compared with phrasal idioms. Recall that phrasal idioms differ with respect to decomposability (as was mentioned in the introductory chapter 1). Now, it has been argued by Nunberg, Sag & Wasow (1994) that only decomposable idioms allow for syntactic permutations, while non-decomposable idioms stay syntactically rigid. I illustrate and discuss this generalization in more detail in section 5.2.3. The

reader should keep in mind that given the generalization above, then, upon examining clausal idioms we would first need to establish whether the decomposable/non-decomposable distinction applies to them as well. If it does, we would expect to find a difference in the behavior of phrasal decomposable idioms and clausal decomposable idioms, with the latter being more immune, so to speak, for syntactic permutations.

C. Finally, if clausal idioms are stored separately from their predicates, we would expect to find unique clausal idioms with verbal passives. Let me explain why this is so. Recall that phrasal idioms were shown to be stored under their lexical heads, and as a result, were shown to disallow idioms uniquely available with the verbal passive diathesis, as this diathesis does not exist in the lexicon. In contrast, independent storage of clausal idioms predicts some idioms to be uniquely available in the verbal passive diathesis. This is because the independent storage method of clausal idioms allows the storage of elements which are outputs of syntactic operations, like (verbal) passivization. Since under independent storage the idiom is listed as one autonomous unit, nothing rules out the storage of an idiom with a verbal passive. Now, since verbal passives are rare in both Russian and Hebrew, the hypothesis does not predict that we will obligatorily find such idioms – only that we might find unique clausal idioms with verbal passives, in sharp contrast with phrasal idioms.

The predictions of the Independent Storage hypothesis of the TSS Model were tested systematically in two large corpora of idiomatic expressions in Russian and Hebrew. Let me elaborate on the methodology of this study, and then turn to examine its findings.

5.2 Corpus Study of Russian and Hebrew Clausal Idioms

5.2.1 Procedure

Let me start with a few words on the corpora used in this study. The Hebrew corpus consisted of two phraseological dictionaries (Fruchtman, Ben-Natan & Shani 2001, containing approximately 500 entries, and Rosental 2009, containing approximately 18,000 entries). The Russian corpus consisted of three phraseological dictionaries (Roze 2010, containing approximately 400 entries; Basko & Zimin 2010, containing approximately 1000 entries; Barad & Shnayderman 2002, containing approximately 1200 entries). Note that these dictionaries were not limited to idiomatic expressions, containing also metaphors, proverbs, and other types of colloquial figures of speech. The procedure involved several steps, numerated below for the reader's convenience.

- (i) The first step was to distinguish between idioms and other types of colloquial expressions. Recall that idioms are defined as multi-lexemic expressions which are *conventionalized* and *figurative* (the reader is referred back to the precise definition in (13) in Chapter 1). In other words, these are expressions in which the choice of words is fixed and their interpretation is non-literal. Each expression, therefore, was examined in light of this definition – if it was conventionalized and figurative, it was included in the corpus; if not, it was excluded.
- (ii) Subsequently, each idiomatic expression listed in the dictionary was checked in Google with respect to its frequency of usage, in order to make sure that it is indeed a 'living' expression, so to speak, in current Hebrew or Russian.
- (iii) Finally, clausal idioms were distinguished from phrasal idioms using the diagnostics presented in the first section of this chapter. As mentioned there, the classification of idioms into clausal and phrasal is based on the presence vs. absence (respectively) of sentential material, such as sentential negation, fixed tense, mood, etc. In idioms containing negation, the negation was removed and the resultant expressions were once again verified using Google-searches and native speakers'

judgments. This time the question was not only about frequency of the resultant phrase, but about its idiomatic meaning: if the idiom ceased to be idiomatic following these changes, it was considered to be clausal (as negation was found to be an obligatory part of the idiomatic meaning). If it preserved the idiomatic meaning following these changes, it was classified as phrasal. In idioms without negation, their tense (or mood, where relevant) was altered and the resulting expressions were checked once again in both Google-searches and judgments of native speakers.²¹ As before, if the idiom ceased to be idiomatic after the change of tense, it was considered to be clausal; if it preserved its idiomatic meaning, it was classified as phrasal.

Let me provide further information about the procedure of collecting native speaker judgments. The judgments were collected from a group of 14 native speakers of Hebrew and 10 native speakers of Russian. They were presented with the original expressions (e.g. *can't see the forest for the trees*), and asked whether the expressions were familiar, and if so, what was their meaning. Following, they were presented with the parallel version of the idioms without the CP-material (e.g. *saw the forest for the trees*). The speakers had to answer the following question: 'What is the meaning of this novel expression – how do you comprehend it?' This allowed me to assess whether the expression was still understood idiomatically, without making my aim explicit (i.e. without using the word 'idiom' in the query). This study includes only those idioms that were judged as non-idiomatic (following the removal of CP-material from the original versions) by the vast majority of native speakers (80% in both cases, thus 11/14 of Hebrew speakers, and 8/10 of the Russian speakers).

²¹ As almost anything can be found on Google, one should be careful with conclusions based on this methodology. In the case of this study, if a few sporadic instances (of new/altered idioms) were found, as opposed to the original's tens and hundreds of thousand entries, it was clear that these sporadic instances should not be taken into account. This is also why native speakers' judgments were used *in addition* to the search engine results, in order to double-check the problematic cases.

5.2.2 Results: Prediction A

First, it was important to establish just how many idioms of each type there were in each corpus. Starting with Hebrew, only 154 idioms were classified as clausal, based on the diagnostics presented above. These expressions are provided in Appendix E. In order to estimate the ratio between phrasal and clausal idioms, the number of phrasal and clausal idioms was counted in a *sample* from the Rosental dictionary (2nd to 5th letters of the Hebrew alphabet). In order to make the comparison more minimal, clausal idioms were compared with VP and AP phrasal idioms only, excluding other types of phrasal idioms (like PPs or NPs).²² In this sample, 175 idioms were classified as phrasal, compared with only 38 clausal.

Similarly to the Hebrew findings, only 64 clausal idioms were found in the Russian corpus, compared with 210 phrasal idioms. Russian clausal idioms are provided in Appendix D.²³

As it was mentioned under prediction A, the attested quantitative difference is expected, if clausal and phrasal idioms are stored differently in the mental lexicon, as suggested. Specifically, given that there is independent empirical evidence that independent storage is more marked than head-based storage, we would expect that clausal idioms, stored by the former method, will be rarer than phrasal idioms, stored by the latter method. Let us now turn to examine the syntactic rigidity of both types of idioms.

5.2.3 Results: Prediction B

As mentioned above, Nunberg, Sag & Wasow (1994) tie syntactic flexibility of idioms to their decomposability. Specifically, they show that only decomposable idioms, that is, idioms allowing

²² Both limitations (i.e. limiting the size of the corpus, and limiting the types of phrasal idioms) were necessary due to the abundance of phrasal idioms. As these limitations run counter to the predicted difference – that is, they make it *harder* for clausal idioms to be less frequent than phrasal idioms – any found difference is all the more pronounced.

²³ Note that the Russian corpus is smaller than the Hebrew, hence its numbers are generally smaller.

their idiomatic meaning to be distributed onto their subparts, allow internal modification. Let me briefly remind the reader of the definition of decomposability adopted in this study:

109. **Decomposability:**

An idiom is decomposable iff it is isomorphic with its idiomatic interpretation – that is, iff each of its components (verb, modifiers) corresponds to a specific part in its idiomatic interpretation

The notion of ‘isomorphism’ is used throughout this chapter in identification of decomposable idioms, phrasal and/or clausal (as will be demonstrated below). This is how it works: if the most natural rephrasing of the idiom, as judged by native speakers, is isomorphic to the idiom’s subparts, then the idiom is considered decomposable; if it is not isomorphic, that is, if the idiomatic meaning cannot be accordingly distributed to each of the idiom’s subparts, the idiom is considered to be non-decomposable.

Going back to the generalization of Nunberg, Sag & Wasow regarding the possibility of internal modification of decomposable idioms, observe the data in (110)-(112):

110. a. *leave no stone unturned*
Idiomatic: ‘Attempt all methods available’
b. *they will leave no legal stone unturned*
111. a. *touch a nerve*
Idiomatic: ‘Cause an emotional reaction’
b. *your remark touched a nerve that I didn't even know existed*
112. a. *jump on the bandwagon*
Idiomatic: ‘Support something that is popular’
b. *many jumped on the latest/medical marijuana bandwagon*

(modified examples taken from Horvath & Siloni: (3))

It is shown above that decomposable phrasal idioms like *leave no stone unturned*, *touch a nerve* and *jump on the bandwagon* allow internal modification of one of their sub-parts by adjectives or relative clauses. In contrast, non-decomposable idioms disallow such modification:

113. a. *kick the bucket*
 Idiomatic: ‘Die’
 b. *John kicked the (#horrible) bucket (#that surprised all his relatives)*
114. a. *chew the fat*
 Idiomatic: ‘Gossip’
 b. *Barbara chewed the #latest/endless fat*
115. a. *saw logs*
 Idiomatic: ‘Snore’
 b. *John saw (#long/afternoon) logs (#that are a sign of being sick)*

(Horvath & Siloni: (4), with slight modifications)

In this dissertation, I consider another type of modification, namely, change in surface word order. As both Russian and Hebrew permit several word orders (cf. English), they are suitable languages to test this possibility. The question arises, then, whether phrasal decomposable idioms will permit the different word order variations available with non-idiomatic sentences. That this is the case is shown below, where I illustrate both types of modification, namely, internal modification and word order variations.

Let us start with Russian, and look at the sentence in (116). It is shown in (116b) that it is possible to internally modify the phrasal decomposable idiom *valjatsja u kogo-to v nogax* ‘lower oneself in front of someone’ – the modification is compatible with the expression’s idiomatic meaning. Note that the modification does not alter the idiomatic meaning. Rather, it introduces a subtle nuance by emphasizing a specific part of the denoted event. To put it differently, the modification is not translated directly onto the idiomatic meaning – but merely highlights the speaker’s approach or stance to the event described in the idiom.²⁴ Further, it is shown in (116c-d) that it is possible to change the word order of the idiom without losing its idiomatic meaning.

²⁴ The possibility to be internally modified does not entail, of course, that any subpart of the idiom will allow for modification. Which parts can and which parts cannot be modified – this is a separate question which I leave for future research. For my purposes here, it is important to establish that decomposable phrasal idioms allow at least *some* subparts to be modified, without losing the idiomatic meaning.

116. a. *valjatsja u gogo-to v nogax* (Russian)
 lie at someone in legs
 ‘Lie at someone’s feet’
 Idiomatic: ‘Lower oneself in front of someone else’
- b. *on zhalko valjaetsja u svojego brata v obeix/ego nogax*
 he pitifully lies at his brother in both/his legs
 Idiomatic: ‘He pitifully lowers himself in front of his brother’
- c. *on u svojego brata v nogax valjaestja*
 he at his brother in legs lies
- d. *on v nogax u svojego brata valjaetsja*
 he in legs at his brother lies

It should be made explicit that the idioms have been embedded in sentences (cf. presenting them in their bare form) in order to make them sound more natural and facilitate their judgments. Similarly to the example above, (117b) shows that the phrasal decomposable idiom *brosat’ slova na veter* ‘make false promises’ allows its subparts to be modified, and (117c-d) show that the idiom allows several variations on its word order.

117. a. *brosat’ slova na veter*
 throw words on wind
 ‘Throw words to the wind’
 Idiomatic: ‘Make false promises’
- b. *Masha chasto brosaet vse/svoi slova na veter*
 Masha often throws all/her words on wind
 ‘Masha often throws all/her words to the wind’
 Idiomatic: ‘Masha often makes false promises’
- c. *da ona opjat’ slova brosaet na veter!*
 but she again words throws on wind
 Idiomatic: ‘Oh, but she makes false promises once again’
- d. *ne nado na veter brosat’ slova*
 no need on wind throw words
 Idiomatic: ‘You shouldn’t make false promises’

Let us now examine Hebrew phrasal decomposable idioms. As shown in (118b), it is possible to internally modify the idiom *sam et ha-klafim al ha-shulxan* ‘told things as they are’ – the modified version retains the idiomatic meaning. Additionally, it is shown in (118c) that it is possible to

change the idiom's word order. Once again, note that the sentences are modified, instead of giving them in their bare form, in order to facilitate judgments.

118. a. *sam et ha-klafim al ha-shulxan* (Hebrew)
 put acc the-cards on the-table
 Idiomatic: 'Told things as they are'
- b. *dan sam et kol-ha-klafim/ha-klafim shelo al ha-shulxan*
 dan put acc all-the-cards/the-cards his on the table
 Idiomatic: 'Dan told everything as it is'
- c. *dan sam al ha-shulxan et kol ha-klafim shelo*
 dan put on the-table acc all the-cards his
 Idiomatic: 'Dan told everything as it is'

Similarly, example (119) shows that the phrasal decomposable idiom *hosif shemen la-medura* 'worsened the current situation with additional action or information' allows internal modification (b), and allows changing its word order (c)-(d).

119. a. *hosif shemen la-medura*
 added oil to+the-fire
 Idiomatic: 'Worsened the current situation with additional action or information'
- b. *dan hosif shemen xam le-medura gdola/boeret*
 dan added oil hot to-fire big/burning
 Idiomatic: 'Dan severely worsened the big/existing argument (by what he did)'
- c. *lo keday lehosif od shemen le-medura ha-boeret*
 not worthwhile add-inf. more oil to-the-fire the-burning
 Literal: 'It's not worthwhile to add more oil to the burning fire'
 Idiomatic: 'You shouldn't ignite a big/existing argument'

So far, then, we have seen that Hebrew and Russian phrasal decomposable idioms behave on a par with their English equivalents, that is, allow for different types of modification. Specifically, we saw that they allow internal modification of one or more of their subparts, in addition to having several variants with respect to word order. Let us now turn to examine clausal idioms.

First, if modification is tied to decomposability, it needs to be determined whether clausal idioms allow for decomposability in the first place, on a par with phrasal idioms. Horvath & Siloni show that clausal idioms exhibit the decomposability/non-decomposability distinction. Let us look at the following English examples, taken from Horvath & Siloni:

120. a. *can't see the forest for the trees*
b. *birds of a feather flock together*
121. a. *could've knocked me over with a feather*
b. *butter wouldn't melt in x's mouth*

(Horvath & Siloni: (5)-(6))

All the expressions above are clausal idioms, but there's a crucial difference between the sentences in (120) and the ones in (121). Specifically, the former's idiomatic meaning can be reconstructed in a decomposable way (e.g. (120a): 'unable to discern an overall pattern from a mass of details'; (120b): 'similar people attract to each other'), while the latter's idiomatic meaning cannot. In other words, it is possible to distribute the different parts of idiomatic meaning onto the different units composing the idioms in (120), but not in (121). Therefore, it seems that clausal idioms, much like phrasal idioms, can be divided in two classes: decomposable (i.e. (120)) and non-decomposable (i.e. (121)).

Recall that it is suggested that clausal idioms are stored as autonomous, structure-less, units, with nothing more than word-order information. How can we account for the attested differences in decomposability? Horvath & Siloni suggest that clausal idioms enter the syntactic derivation as whole, unanalyzed units, but in the course of the derivation, allow for an assignment of syntactic structure. This is done by the application of Merger, the operation building syntactic structure (e.g. Chomsky 1995), which parses the string of items and assigned it hierarchical constituent structure. Indeed, it has been independently suggested that Merger (or its predecessors) is active not only in production, but also in sentence processing (as suggested in e.g., Pritchett 1992; Siloni 2013).

Clausal idioms, then, can undergo a process of re-analysis, in which a structure-less chunk is divided onto smaller phrases, distributing the idiomatic meaning between them. Therefore the decomposability vs. non-decomposability distinction observed with phrasal idioms ought to be relevant for clausal idioms too. If so, then decomposable clausal idioms are predicted to be immune for syntactic permutations, in contrast with decomposable phrasal idioms. Crucially, Horvath & Siloni further observe that since this re-analysis process applies in the course of the syntactic derivation, upon insertion, clausal idioms constitute a single-unit fixed member, which is predicted to disallow modification. Let us check these predictions (prediction B) below, both in Russian and in Hebrew.

First, it needs to be determined just how many decomposable idioms were found in our corpus of Hebrew and Russian clausal idioms. As one might expect, the numbers are quite low: among the 64 Russian clausal idioms, only 8 were found to be isomorphic with their meaning, hence decomposable; similarly, among the 154 Hebrew clausal idioms, only 17 were found to be isomorphic with their meaning, hence decomposable. (They are marked as ‘DEC’ in both Appendices.)

Let us now look at the Russian example in (122), which shows that it is impossible²⁵ to internally modify the clausal decomposable idiom *igra ne stoit svech* ‘this is not worth it’, neither to change its word order. Specifically, (122b) shows that once a sub-part of the idiom is modified, the sentence becomes infelicitous; (122c)-(122d) show that the idiom loses its idiomatic meaning once its word order is altered. Note that the idiom has been embedded in another clause in order to make the change in word order sound more natural. Nevertheless, the alternative word orders are judged impossible – though crucially, the sentences are judged as grammatically well-formed.

²⁵ The judgments are based on a questionnaire which was given to 10 native speakers of Russian. Problematic or unclear cases are marked with ??

122. a. *igra ne stoit svech* (Russian)
 game not cost candles
 Idiomatic: ‘This is not worth it’
- b. *igra ne stoit #nikakix/#dazhe deshevyx svech*
 game not cost #no/ #even cheap candles
- c. *??ja povtorjaju eshe raz, ne stoit svech igra*
 I repeat once again, not worth candles game
- d. *#svech’ ne stoit igra*
 candles not worth game

Similarly, in (123) we see that the clausal idiom *vernemsja k nashim baranam* ‘let’s deal with our problems’ cannot be internally modified (123b), nor have its word order changed (123c). Note once again that in both examples, the difference in word order does not render the sentences ungrammatical, but renders their idiomatic meaning unavailable. Thus, it seems that the idiomatic meaning is associated with a specific word order.

123. a. *vernemsja k nashim baranam*
 return to our sheep
 Idiomatic: ‘Let’s deal with our problems’
- b. *vernemsja k nashim #starym/#skromnym baranam*
 return to our old / modest sheep
- c. *#stoit k nashim baranam vernut’sja*
 worth to our sheep return-inf.

This state of affairs, namely, the syntactic rigidity of decomposable clausal idioms in Russian, is illustrated below with 3 additional idioms. As before, the sentence in (a) illustrates the relevant idiom, the sentence in (b) illustrates its immunity to internal modification, and the sentences in (c)-(d) (or just (c)) illustrate its unavailability in different word order(s). All decomposable clausal idioms in Russian were found to conform to this pattern of syntactic rigidity, thus supporting prediction B of the independent storage hypothesis.

124. a. *vot gde sobaka zaryta*
 here where dog buried
 Literal: ‘This is where the dog is buried’
 Idiomatic: ‘This is the origin of things’
- b. *vot gde #samaja pervoja/#staraja sobaka zaryta*
 here where most first/ old dog buried
- c. *vot gde zaryta sobaka*
 here where buried dog
 (only literal)
125. a. *za derevjami ne videt’ lesa*
 behind trees not see forest
 ‘Not see the forest for all the trees’
 Idiomatic: ‘Unable to discern an overall pattern from a mass of details’
- b. *za #bol’shymi/#dalekimi derevjami ne videt’ #vsego lesa*
 behind big/ far trees not see whole forest
- c. *#da on ne videt lesa za derevjami*²⁶
 but he not sees forest for trees
- d. *#da on lesa ne vidit za derevjami*
 but he forest not sees for trees
126. a. *skol’ko vody uteklo!*
 how-much water flowed-away
 ‘How much water has flowed away!’
 Idiomatic: ‘How everything has changed!’
- b. *skol’ko #nashej/#toj vody uteklo*
 how-much our/that water flowed-away
- c. *aj, a vody-to skol’ko uteklo!*
 hey, but water how-much flowed-away
 (only literal)

Thus, it is shown above that Russian clausal idioms behave in accord with prediction B.

Specifically, it is shown that decomposable clausal idioms behave differently from decomposable

²⁶ The parallel sentence beginning with *da on* in the original word order is perfectly grammatical and idiomatic:

(i) *da on za derevjami ne vidit lesa*
 but he behind trees not sees forest
 ‘Oh, but he doesn’t see the whole picture!’

phrasal idioms: the former disallow internal modification and change in word order, in contrast with the latter.

Let us now turn to Hebrew clausal idioms. It is shown in (127b) that it is impossible to internally modify the decomposable clausal idiom *le-kol sir yesh mixse* ‘everyone has a perfect match’ (with obligatory present tense), neither to have its word order changed as in (127c).

127. a. *le-kol sir yesh mixse*
to-each pot is lid
Idiomatic: ‘Everyone has a perfect match’
- b. *le-kol sir #she-hu/meyuxad yesh mixse #mat'im*
to-each pot that-is/unique is lid suitable
- c. *#mixse yesh le-kol sir*
lid is to-each pot

Similarly, the sentences in (128) show that the clausal decomposable idiom *ha-pishpesh ala lemaala* ‘a low person has taken a high position’ cannot be modified, and cannot have its word order changed. Notably, the version in (d) uses a sentence initial PP *lifney shavua* ‘a week ago’, which usually serves as a trigger for the VS order, rendering it possible with all types of verbs in Hebrew. Nevertheless, the sentence remains infelicitous, despite of it being judged as well-formed and otherwise grammatical.

128. a. *ha-pishpesh ala lemaala*
the-flea rose upstairs
‘The flea rose upwards’
Idiomatic: ‘A low person has taken a high position’
- b. *ha-pishpesh #ha-mefursam/ha-muclax ala lemaala*
the-flea the-famous/the-successful rose upwards
- c. *#shamata? lemaala ala ha-pishpesh!*
heard-you? upstairs rose the-flea
- d. *#lifney shavua ala ha-pishpesh lemaala*
before week rose the-flea upstairs

Slightly differently, the sentences in (129) show that the clausal decomposable idiom *kshe nagia la-gesher naavor oto* ‘we’ll solve the problem once it arises’ cannot be internally modified (b), while for some speakers, it can have its word order modified without affecting the idiomatic interpretation (129c).

129. a. *kshe nagia la-gesher naavor oto*
 when arrive-we to+the-bridge surpass-we it
 ‘When we reach the bridge, we’ll surpass it’
 Idiomatic: ‘We’ll solve the problem once it arises’
- b. *kshe nagia la-gesher #ha-raxok/#ha-mafxid naavor oto*
 when arrive-we to+the-bridge the-far/the scary surpass-we it
- c. ?? *naavor et ha-gesher kshe nagia elav*
 surpass-we. acc the-bridge when arrive-we to+it
 Idiomatic: ‘We’ll solve the problem once it arises’

Another example is illustrated below in (130). Specifically, it is shown in (130b) that the clausal decomposable idiom *kshe xotvim ecim afim shvavim* ‘when doing (anything), problems arise’ cannot be internally modified, and it is shown in (130c) that its word order cannot be changed without losing the idiomatic meaning.

130. a. *kshe xotvim ecim afim shvavim*
 when cut-down trees fly shavings
 ‘Shavings fly when trees are cut down’
 Idiomatic: ‘Problems arise in course of doing’
- b. *kshe xotvim ecim #gdolim/#nokshim afim shvavim #rabim*
 when cut-down trees big/tough fly shavings numerous
- c. *#afim shvavim kshe xotvim ecim*
 fly shavings when cut-down trees

Having examined all the clausal decomposable idioms in the Hebrew corpus, the same pattern was found to hold. Namely, decomposable clausal idioms were found to disallow internal modification and somewhat less strongly, were found to disallow word order permutations. The judgments on the word order variations were more difficult to obtain from speakers. The intuitions were not as strong,

compared with the possibility of internal modification, and speakers often commented in hesitation that ‘It sounds funny, I don’t know if it is possible’ or ‘I wouldn’t say it like this, but I understand it (idiomatically)’. I conclude that Hebrew findings join the Russian findings in support of prediction B of the independent storage hypothesis, namely, syntactic rigidity of clausal idioms, as it is evident from their inability to be internally modified. Word order permutations of decomposable clausal idioms were less acceptable than word order permutations of their phrasal counterparts, but this diagnostic seems to be less reliable, at least in Hebrew. I leave the difference between the two diagnostics, as well as the difference between the two languages (with respect to word order) to future research.

5.2.4 Results: Prediction C

Let me summarize the findings so far. We have seen that in both Russian and Hebrew corpora, there exists a separate class of idioms, labeled ‘clausal’ as they involve sentential material (e.g. negation, fixed tense/mood). Crucially, these idioms behave differently from phrasal idioms, as predicted by the TSS: first, we saw that clausal idioms are significantly less frequent than phrasal idioms. This is expected, if their storage method is more marked than that of phrasal idioms. That is, assuming that clausal idioms are stored on a separate list (i.e. independent storage hypothesis), they are predicted to be more marked than idioms stored under their lexical head (i.e. head-based storage hypothesis), as the independent storage mechanism is independently shown to be more marked than the head-based storage mechanism. Additionally, we saw that the syntactic rigidity of clausal idioms differs significantly from that of phrasal idioms. Specifically, it was shown that decomposable clausal idioms disallow internal modification of their constituents without losing their idiomatic meaning, in contrast with (decomposable) phrasal idioms. It was also shown that clausal decomposable idioms are less able to have their word order changed, compared with their phrasal counterparts – though this diagnostic was found to be less reliable, at least in Hebrew.

Let us now turn to examine the final prediction made by the independent-storage hypothesis, namely, that some clausal idioms will be uniquely available with verbal passives. Recall that this is predicted to be the case as independent storage method of clausal idioms allows the storage of elements which are outputs of syntactic operations, like verbal passives. Since under independent storage the idiom is listed as one autonomous unit, nothing rules out the lexical storage of an idiom with a verbal passive (although the latter isn't stored as an independent lexical entry). Let us examine this prediction, starting once again with Russian.

Recall that distinguishing between adjectival and verbal passives in Russian was quite intricate, as the two are often homophonous (as discussed in chapter 4; the reader is referred to Babby & Brecht 1975; Babyonyshev 1996). We saw that sentences like the following can be interpreted either referring to the action of 'inserting' or the resultant state 'inserted':

131. *v tu dver', vmesto filenki bylo vstavleno matovoje steklo*
 in that door, instead cardboard-paper was inserted frosted glass
 'A frosted glass was inserted in that door, instead of a cardboard paper'

It was mentioned in chapter 4 that the unambiguously verbal passive form in Russian ends with the suffix *sja*, like the sentence *Dom stroilsja (Vanej)* 'The house was being built (by Vanja)'.

Unfortunately, there were no clausal idioms containing such unambiguously verbal passive forms. Specifically, among the 64 clausal idioms, 8 were found to contain passive forms which were morphologically ambiguous between the verbal and the adjectival readings, but semantically – unambiguously stative. Hence, these forms are classified as adjectival passives, and presented below (ft refers to 'fixed tense' and obn refers to 'obligatory negation'). The sentences in (a) present these idioms as they are listed in the dictionaries and used in spoken language; sentences in (b) show that these idioms are unique for the adjectival passive diathesis, being unavailable with their transitive counterparts.

132. a. *vot gde sobaka zaryta* (ft)
 here where dog buried-pass.
 ‘Here’s where the dog is buried’
 Idiomatic: ‘This is the origin/source of events’
- b. *vot gde oni zaryli sobaku*
 here where they buried dog
 ‘Here’s where they buried the dog’ (only literal)
133. a. *golova solomoj nabita* (ft)
 head straw-instr. stuffed-pass.
 ‘Head is stuffed with straw’
 Idiomatic: ‘X is stupid, retarded’
- b. *oni ej golovu solomoj nabili*
 they her head straw-instr. stuffed
 ‘They stuffed her head with straw (e.g. a puppet)’ (only literal)
134. a. *karta bita* (ft)
 card beaten
 ‘The card is killed’
 Idiomatic: ‘This is total loss’
- b. *on pobil ego kartu*
 he beat his card
 ‘He beat his (opponent) card’ (only literal)
135. *gore lukom podpojasano* (ft)²⁷
 grief bast-fibre-instr. supported-pass.
 ‘Grief is supported with bast-fibre (a traditional weaving material in Russia)’
 Idiomatic: ‘X is tremendously poor’
136. a. *na lbu napisano* (ft)
 on forehead written
 ‘Written on (his/her) forehead’
 Idiomatic: ‘This is evident’
- b. *oni emu napisali na lbu*
 they him wrote on forehead
 ‘They wrote on his forehead’ (only literal)

²⁷ The transitive counterpart of *podpojasano* is no longer used in modern Russian.

137. a. *odnim miron mazany* (ft)
 same miro smeared-pass.
 ‘Smeared by the same miro (type of paste)’
 Idiomatic: ‘Extremely similar’
- b. *ix odnim miron mazali*
 they same miro smeared
 ‘They smeared them with the same miro (type of paste)’ (only literal)
138. a. *emu zakon ne pisan* (obn)
 to-him law not written
 ‘The law is not written for him’
 Idiomatic: ‘He’s beyond rules’
- b. *#oni emu ne pisali zakon*
 they him not wrote law
 ‘They didn’t write the law for him’ (infelicitous)
139. a. *ne lykom shyt* (obn)
 not bast-fibre-instr. sewn
 ‘Not sewn with bast-fibre’
 Idiomatic: ‘Not poor’
- b. *eto ne shyli lykom*
 this not sew bast-fibre-instr.
 ‘They didn’t sew it with bast-fibre’ (only literal)

As the semantics of these forms is unambiguously stative, these are considered to be adjectival passives. Therefore, the corpus search yielded no unique clausal idioms with verbal passives. Two things must be noted: first, the scarcity of verbal passive in spoken Russian, combined with the rather small size of Russian corpus, render this state of affairs not unexpected. Further, note the contrast between (133)-(139) with the data examined in chapter 4, that is, phrasal idioms in Russian. Recall that idioms with adjectival passives, both unique and shared, were extremely rare, leading us to look at semantic drifts in sub-standard language. The existence of 8 idioms with adjectival forms provides indirect support for the distinction between clausal and phrasal idioms. Furthermore, it is possible that the proposed difference in their storage methods can account for the difference. If for some reason adjectival passive forms in Russian cannot head idioms, it is not surprising to find that phrasal idioms

are rare with adjectival passives, in contrast with clausal idioms. Recall that clausal idioms are suggested to be stored without any phrase structure, which means that the adjectival passive in this case will not be heading the idiomatic expressions.

Why would this be the case, that is, what could explain the impossibility of adjectival passives to head phrasal idioms? I leave this question open for future research on the specific properties of adjectival passives in Russian. Either way, the data provide indirect support for the proposed distinction between phrasal and clausal idioms, though not providing a direct support for the specific proposal of independent storage of Russian clausal idioms.

Let us now turn to examine Hebrew clausal idioms with passive forms. In the Hebrew corpus of clausal idioms, 7 idioms were found to contain verbal passives. Observe the examples below:

140. *hushlax le-gov arayot* (ft)
was.thrown to-den lions
'Was thrown to lion's den'
Idiomatic: 'Was forced to endure a battle with strong forces'
141. *korcu me-oto ha-xomer* (ft)
were.formed from-same the-material
'Were formed from the same material'
Idiomatic: 'Very similar'
142. *nikra el ha-degel* (ft)
was.called to the-flag
'Was called to the flag'
Idiomatic: 'Asked to take part in a public act/speech'
143. *adayin lo neemra ha-mila ha-axrona* (obn)
still not was.said the-word the-last
'The last word still hasn't been told'
Idiomatic: 'The future is unclear'
144. *ma nisgar?* (ft)
what was.closed
'What's closed?'
Idiomatic: 'What has been decided?'

145. *divrey xaxamim be-naxat nishmaim* (ft)
 things wise in-quiet are.heard
 ‘Wise things are heard in quiet’
 Idiomatic: ‘In slow and peaceful tone, ideas are accepted more readily’
146. *nigzezu maxlefotav* (ft)
 were.cut-off tresses-his
 ‘His tresses were cut off’
 Idiomatic: ‘He lost his strength’

In contrast with the Russian passive forms, Hebrew makes use of distinct verbal templates in order to distinguish between verbal and adjectival passives. Specifically, all eight entries above belong to either *huf'al* (e.g. *hushlax* ‘was thrown’) or *nif'al* (e.g. *nisgar* ‘was closed’) templates, both of which are unambiguously verbal (for precision, it should be noted that a few adjectival passives exist in *nifal*, but these forms are extremely rare, and none of them appears in the data above; the reader is referred to Meltzer-Asscher (2011) for an extensive discussion). However, some are not unambiguously passives, as the template *nif'al* is also used with unaccusative verbs. Thus, template-wise, the entries *nikra* ‘was called’ (142), *ne'emra* ‘was said’ (143), *nisgar* ‘was closed’ (144), *nishmaim* ‘are heard’ (145) and *nigzezu* ‘were cut off’ (146) are a priori ambiguous between the verbal passive and unaccusative interpretation. In order to distinguish between them, recall our discussion in chapter 3 (specifically, section 3.1). Recall that unaccusative predicates were defined as intransitive predicates whose sole theta role is Theme and whose transitive counterparts select Cause as their external theta-role (Reinhart 2000, 2002). Recall also that only predicates which select Cause (cf. Agent) can undergo de-causativization, that is, can have unaccusative counterparts. Therefore, by examining the thematic properties of these entries’ transitive counterparts we can determine whether they are unaccusative or verbal passives. The transitive entries of these verbs are illustrated below.

147. *ha-mora/#ramkol kara la-yeladim laxzor la-kitot*
 the-teacher/microphone called to+the-kids return to+the-classes
 ‘The teacher called the kids to return to their classes’

148. *ha-shadran/#mikrofon amar et ha-yediot ha-axronot*
 the-broadcaster/microphone told acc the-news the-last
 ‘The broadcaster told the last news’
149. *ha-em/ruax sagra et ha-delet*
 the-mother/wind closed acc the door
 ‘The mother/wind closed the door’
150. *ha-kalba/#ruax hishmia raash nora*
 the-dog/ wind made-hear noise horrible
 ‘The dog has produced a horrible noise’
151. *ha-saparit/#sakin gazeza et peotav*
 the-hairdresser/knife trimmed acc sidelocks+his
 ‘The hairdresser trimmed his sidelocks’

As shown above, all these verbs, apart from *sagar* ‘closed’ (149), select for Agent as their external theta roles, rendering the potentially ambiguous forms as unambiguous verbal passives. Thus, in the Hebrew corpus we find 6 clausal idioms containing verbal passives. Now it remains to determine whether they are unique verbal passive idioms, that is, unavailable with other diatheses. Let us examine what happens when they are used in the transitive form:

152. *hem hishlixu oto le-gov ha-arayot*
 they threw him to-den the-lions
 ‘They threw him to the lion’s den’ (only literal meaning)
153. *karcu otam me-oto ha-xomer*
 formed them from-same the-material
 ‘They formed them from the same material’ (only literal meaning)
154. *kar’u oto el ha-degel*
 called him to the-flag
 ‘They called him to the flag’ (only literal meaning)
155. *hem adayin lo amru et ha-mila ha-axrona*
 they still not said acc the-word the-last
 ‘They still didn’t say the last word’
 Idiomatic: ‘It isn’t over yet’
156. *hem hishmiu divrey xaxamim be-naxat*
 they made-hear things wise in-quiet
 ‘Wise things were voiced in quiet’ (only literal meaning)

157. *hem gazezu et maxlefotav*
they cut-off acc tresses-his
'They cut off his tresses' (only literal meaning)

According to the judgments available to me, all the idioms above are unique idioms – that is, their idiomatic meaning becomes unavailable once they are used with transitive verbs.

Thus, Hebrew data provide robust support for the different storage mechanism of clausal and phrasal idioms: while there are no unique phrasal idioms with verbal passives, due to the fact that the latter is not a lexical entry and therefore no idiom can be stored uniquely with them, there exist unique clausal idioms with verbal passives, due to them being stored on an independent list as structure-less autonomous units.

Notably, the idiom *adayin lo neemra ha-mila ha-axrona* 'the future is unclear' (143) can be used metaphorically with its transitive counterpart, as shown in (155). However, its meaning is different from the verbal passive version of the idiom. With the verbal passive, the idiom means 'the future is unclear', and it is used often with scientific discoveries, or advancements in technology; when the idiom is used with the transitive verb, the meaning is 'they will return and show everyone what they're worth', and it is used often when a person/group of people promise or threaten their return to the scene they currently have to leave. Thus, the idiomatic meaning of the idiom with the verbal passive is different from the idiomatic meaning of the idiom with the transitive verb, rendering this a unique verbal passive idiom.

In contrast with Russian, then, Hebrew provides robust evidence for the different storage method of clausal idioms. Specifically, it shows that clausal idioms can be unique to the verbal passive diathesis. As verbal passives are not lexically listed, their participation in unique idioms is expected only if their listing is independent of the listing of their head predicate – as it is suggested by the independent storage hypothesis.

5.3 Summary

This chapter has examined in detail the properties of clausal idioms in both Hebrew and Russian. Adopting the TSS Model developed by Horvath & Siloni (2012), I examined its predictions regarding the differences between phrasal and clausal idioms. Specifically, I examined the suggestion that there exists a separate class of idiomatic expressions, namely clausal idioms, defined by the obligatory presence of CP material. Examining their storage possibilities, we have seen good theoretical reasons to suggest that clausal idioms are stored differently from phrasal idioms. Specifically, we have seen that head-based storage method seems a priori unsuitable for clausal idioms due to the independently known differences between lexical and functional material. In addition to these theoretical reasons, we have discovered empirical support for the proposed distinction between the two types of idioms. Specifically, we have seen evidence from both languages that clausal idioms are stored independently, accounting for their general scarcity, their syntactic rigidity and the existence of unique clausal idioms containing verbal passives (in Hebrew). These properties were found to contrast sharply with phrasal idioms, which are quite abundant, syntactically flexible (depending on decomposability) and are never unique to the verbal passive diathesis. This cluster of properties follows directly from the TSS model, according to which phrasal idioms are stored under their lexical head, and clausal idioms are stored on an independent list. Thus, empirical data from both Russian and Hebrew provide robust support for the TSS model and the different storage methods it suggests for both types of idioms.

A cluster of well-defined properties and distinctions follow from the proposed difference in storage methods, subsequently giving rise to several questions. First, how do clausal and phrasal idioms behave cross-linguistically? A priori, we would expect to find the same distinctions reported in this work and the suggested difference in storage to be universal. If so, it would be interesting to examine the acquisition of clausal idioms cross-linguistically, and compare it with that of phrasal

idioms. Specifically, if the storage of clausal idioms is a more marked procedure, as suggested in Horvath & Siloni (2012), we could expect their course of acquisition to be delayed, or at the very least, to differ from that of phrasal idioms. It would be of special interest to compare clausal decomposable idioms with phrasal decomposable idioms. Recall that children acquiring Hebrew were found to have more difficulty completing decomposable idioms than their non-decomposable counterparts (the reader is referred to section 2.3 of this dissertation). Therefore, it would be interesting to examine whether the acquisition of clausal idioms exhibits the same distinction. Additionally, it would be interesting to examine lexical retrieval of both types of idioms with adult speakers. If the proposed difference in their storage techniques has any affect on their ease of retrieval, we would expect clausal idioms to be more difficult to retrieve. Hopefully, answers given to these intriguing questions in future research will reveal additional properties of idiomatic expressions cross-linguistically.

Appendix D: Clausal Idioms in Russian

I. Fixed Tense

Idiom	Literal	Idiomatic
1. <i>babushka nadvoje skazala</i> grandmother for-two said	‘grandmother said twice’	‘you never know, you can’t predict what will happen’
2. a. <i>vernemsja k nashim baranam</i> return-ft. to our sheep DEC b. <i>vernemsja k nashim #starym/#skromnym baranam</i> return-ft to our old/modest sheep c. <i>stoit k nashim baranam vernut’sja</i> worth to our sheep return-inf.	‘let’s return to our sheep’ ‘let’s return to our old/modest sheep’	‘let’s deal with our problems’ --
3. <i>vzjatki gladki (s nego)</i> bribes smooth (from him)	‘the bribes come down smoothly (from him)’	‘he cannot be bribed’
4. a. <i>vot gde sobaka zaryta</i> here where dog buried-pass. DEC b. <i>vot gde #samaja pervoja/#staraja sobaka zaryta</i> here where most first/old dog buried c. <i>vot gde zaryta sobaka</i> here where buried dog	‘this is where the dog is buried’ ‘this is where the first/old dog is buried’	‘this is the origin, the source’ --
5. <i>v rubashke rodilsja</i> in shirt born	‘was born with his shirt on’	‘lucky’
6. <i>v tixom omute cherty vodjatsja</i> in quiet lake chorts hang-out	‘in quiet waters of the lake there are chorts (evil spirits)’	‘quiet on the outside, tumultuous on the inside’
7. <i>gol’ na vydumki xitra</i> poverty on inventions sly	‘poverty is sly with inventions’	‘when poor, you find the best solutions/inventions’
8. <i>golova solomoj nabita</i> head straw-instr. stuffed-pass	‘the head is stuffed with straw’	‘stupid, retarded’

9. <i>gore lykom</i> grief bast-fibre-instr. <i>podpojasano</i> supported	‘grief is supported by bast fibre’	‘tremendously poor’
10. a. <i>dni soch'teny</i> days counted DEC b. <i>#maminy dni #uzhe soch'teny</i> mother-gen day already counted c. <i>vrachi emu skazali chto soch'teny dni</i> doctors him-dat told that counted days	‘days are counted’ ‘mother’s days are (already) counted’ ‘the doctors told him that days are counted’	‘life's short’ -- --
11. <i>do svad'by zazhivet</i> till wedding heal	‘it will heal until the wedding’	‘it will pass’
12. a. <i>zhrebij broshen</i> die cast DEC b. <i>#etot/#vazhnyj zhrebij broshen</i> this/important die cast c. <i>ona soobshila chto broshen zhrebij</i> she informed that cast die	‘the die is cast’ ‘this/important die is cast’ ‘she informed us that the die is cast’	‘the decision is made’ -- ?? ‘she informed (us) that the decision is made’
13. <i>i na solnce jest' pjatna</i> and on sun are stains	‘the sun too has stains’	‘everything is imperfect’
14. <i>kak v vodu gljadet'</i> like in water look	‘as if to look in water’	‘to foresee’
15. <i>kak mamaj proshel</i> like mamay walked	‘as if a mamay (folk hero) walked by’	‘total mess and destruction’
16. <i>kakaja muxa ukusila?</i> which fly bit	‘which fly bit (you/him)?’	‘what’s the matter?’
17. <i>karta (u)bita</i> card killed	‘the card is killed’	‘total loss’
18. <i>kogda rak svistnet</i> when crab whistle	‘when the crab will whistle’	‘never’
19. <i>na vore shapka gorit</i> on thief hat burns	‘the hat burns on the thief’	‘the lie comes out at the end’
20. <i>na lbu napisano</i> on forehead written-pass	‘written on the forehead’	‘extremely clear’

21. <i>na xodu podmetki rvet</i> on walk clothes tears	'(he) tears clothes while walking'	'extremely energetic'
22. <i>nashla kosa na kamen'</i> went scythe on rock	'the scythe met a rock'	'a clash between opposing forces or ideologies'
23. <i>odnim mirom mazany</i> same miro-instr. smeared	'smeared with the same miro (type of paste)'	'very similar in ideas, beliefs'
24. <i>(pokazat') gde raki zimuyut</i> (show) where crabs winter	'(to show) where the crabs are spending their winter'	'to teach someone a lesson'
25. <i>plevat' xotel</i> spit wanted	'he wanted to spit'	'doesn't give a damn'
26. a. <i>skol'ko vody uteklo!</i> how-much water flowed-away! DEC b. <i>skol'ko #nashey/#toj vody uteklo</i> how-much our/that water flowed-away c. <i>aj, a vody-to skol'ko uteklo</i> hey, but water how-much flowed-away	'how much water has flowed away!' 'how much our/that water flowed away!' 'oh, but how much water has flowed away!'	'how everything has changed!' -- --
27. <i>xot' svjatyx vynosi!</i> as-well saints take-out	'you might as well take out all the saints!'	'denoting rude, blasphemous behavior'
28. <i>xot' sharom pokati</i> as-well ball roll	'you might as well roll the ball (in there)'	'empty'
29. <i>vsjako lyko v stroku</i> any tree-bark in weave-line	'any tree-bark is good for weaving'	'everything suits'
30. <i>ushki na makushke</i> ears on crown	'he/she has his/her ears on the crown of her/his head'	'keep an ear to the ground'
31. <i>delo v shljape</i> thing in hat	'the thing's in the hat'	'all is going to be ok'

II. Obligatory Negation

Idiom	Literal	Idiomatic
1. <i>beda odna ne xodit</i> trouble alone not walk	‘trouble does not walk by itself’	‘trouble invites another trouble’
2. <i>brovju ne povel</i> eyebrow not move	‘did not move an eyebrow’	‘didn’t lift a finger’
3. <i>bumaga ne krasnejet</i> paper not blush	‘the paper does not blush’	‘in writing, you can express everything’
4. <i>vodoj ne razoljesh</i> water not pour-apart	‘you can’t tear them apart with water’	‘very close, always together’
5. <i>vyjedenogo jajca ne stoit</i> eaten egg not worth	‘not worth an eaten egg’	‘worthless’
6. <i>deneg kury ne kljujut</i> money chickens not pick	‘chickens do not pick (his) money’	‘very rich’
7. <i>dengi ne paxnut</i> money not smell	‘money does not smell’	‘the value of money is not influenced by its origin’
8. <i>dusha ne lezhit</i> soul not lie	‘his soul does not lie (i.e. lie-down)’	‘s/he doesn’t want to do it’
9. <i>dushy ne chajat’</i> soul not hope	‘doesn’t expect/hope for (his) soul’	‘to love someone dearly, unconditionally’
10. <i>emu zakon ne pisan</i> him law not written	‘to him the law is not written’	‘he’s outside of law’
11. a. <i>za derevjami ne videt’ lesa</i> behind trees not see forest DEC	‘not see the forest for all the trees’	‘to miss the whole picture by focusing only on the details’
b. <i>za #bol’shymi/#dalekimi derevjami ne videt’ #vsego lesa</i> behind big/far trees not see the whole forest	‘not see the (whole) forest for all the big/far trees’	--
c. <i>??da on ne videt lesa za derevjami</i> but he not see forest behind trees	‘but he doesn’t see the forest for the trees’	--

d. <i>da on lesa ne videt za derevjami</i> but he forest not see behind trees	'but he doesn't see the forest for the trees'	--
12. <i>i v us sebe ne and in moustache to-self not dujet</i> blow	'and he doesn't even blow his own moustache'	'doesn't give a damn'
13. a. <i>igra ne stoit svech'</i> game not worth candles <u>DEC</u>	'the game is not worth the candles'	'not worth it'
b. <i>igra ne stoit #nikakix/ #dazhe deshevyx svech'</i> game not worth no/ even cheap candles	'the game is not worth no/even cheap candles'	--
c. <i>ja povtorjaju eshe raz, ne stoit svech igra</i> i repeat once again not worth candles game	'I repeat once again, the game is not worth the candles'	?? 'I repeat once again, it's not worth it'
d. <i>svech' ne stoit igra</i> candles not worth game	'the game is not worth the candles'	--
14. <i>kamnja na kamne ne ostavit'</i> stone on stone not leave	'not to leave a stone on stone'	'ruin everything'
15. <i>kashi ne svarish (s nim)</i> kasha not cook (with him)	'you can't cook kasha (Russian porridge) with him'	'you can't do business with him'
16. <i>komar nosu ne podtochit</i> mosquito nose not sharpen	'mosquito won't sharpen its nose'	'flawless'
17. <i>lica net na nem</i> face not on him	'he doesn't have his face on him'	'feeling weak/sick'
18. <i>lyka ne vjazhet</i> bast-fibre not knit	'cannot knit with bast fibre'	'retarded/drunk'
19. <i>moloko na gubax ne obsoxlo</i> milk on lips not dry	'the milk hasn't dried from his lips'	'he's very young'
20. <i>muxi ne obidit</i> fly not hurt	'won't hurt a fly'	'won't hurt anyone'
21. <i>ne vse kotu maslenica</i> not all cat maslenitsa	'not everything is like butter-week (Maslenitsa) for the cat'	'life's no picnic'

22. <i>ne v svojej tarelke</i> not in own dish	'not in his own dish'	'uncomfortable'
23. <i>ne lykom shyt</i> not bast-fibre sewn	'not sewn with bast fibre'	'not poor'
24. <i>nesolono xlebvshi</i> not-salt-with eaten	'having eaten without salt'	'having returned with nothing'
25. <i>ni v kakije vorota ne lezet</i> not in any gates not enter	'doesn't get into any gates'	'unheard of'
26. <i>ni uxa ni ryla ne smyslit/znajet</i> not ear not snout not understand/know	'doesn't know ears nor snouts'	'stupid'
27. a. <i>nomer ne projdet</i> number not pass DEC b. <i>#etot blestjashiy nomer ne projdet #tak legko</i> this startling number won't pass so easily c. <i>da ja uverena, ne projdet nomer</i> but I sure, not pass number	'the number won't pass' 'this startling number won't pass so easily' 'but I'm sure, the number won't pass'	'the trick won't work' -- ?? 'but I'm sure, the trick won't work'
28. <i>posle draki kulakami ne mashut</i> after fight fists not wave	'you don't wave with the fists after the fight is over'	'too late'
29. <i>ruki ne tuda prishity</i> hands not there sewn	'hands are mis-sewn'	'clumsy'
30. <i>s jazyka ne sxodit</i> from tongue not come-out	'doesn't come out from one's tongue'	'very frequent, used a lot'
31. <i>suzhennogo konem ne objedesh</i> intended horse not pass	'you can't pass your intended (=husband) with the horse'	'your marriage is fate'
32. <i>guba ne dura</i> lip not stupid	'his/her lip is not stupid'	'someone who knows to find the best for him/her'
33. <i>uma ne prilozhu</i> brain not put	'can't put my brain'	'can't understand/guess it'

Appendix E: Clausal Idioms in Hebrew

I. Fixed Tense

Idiom	Literal	Idiomatic
1. <i>avad alav ha-kelax</i> lost on-him the-kelax	'the kelax (a name of town, according to some interpretations) has lost on him'	'got old'
2. <i>avot axlu boser ve-shiney</i> fathers ate unripe-fruit and-teeth <i>ha-banim takhena</i> the-sons will+be+dull	'fathers ate unripe fruit and their sons teeth will become dull'	'fathers' sins pass on to their sons'
3. <i>even mi-kir tizak</i> stone from-wall will-cry	'the stone from the wall will cry'	'a call against a criminal act'
4. <i>even nagola meal libo</i> stone rolled from his+heart	'a stone rolled from his heart'	'relieved'
5. <i>avanim shaxaku mayim</i> stones wore-out water	'water wore stones'	'with persistence, anything can be accomplished'
6. <i>adam le-adam zeev</i> man to-man wolf	'a man is a wolf to a fellow man'	'hostility between human beings'
7. <i>adam nashax kelev</i> man bit dog	'a man bit a dog'	'improbable, unlikely'
8. <i>ahava mekalkelet et ha-shura</i> love ruins acc the-line	'love ruins the line'	'love changes one'
9. <i>o she ha-paric yamut,</i> or that the-nobelman will-die <i>o she ha-kelev yamut</i> or that the-dog will-die	'either the nobleman will die, or his dog'	'endless procrastination'
10. <i>oznayim la-kotel</i> ears to-the-western wall	'ears to the western wall'	'there are no secrets'
11. <i>ibadeta et ha-lashon?</i> lost acc the-tongue	'have you lost your tongue?'	'don't you have anything to say?'
12. <i>eyx oxlim et ze?</i> how eat acc this	'how do you eat this?'	'how to make sense of it?'

13. <i>emet mi-erec ticmax</i> truth from-land will-grow	'the truth will grow from land'	'truth shouldn't be searched in God, but among human beings'
14. <i>efshar leexol me-ha-ricpa</i> possible to-eat from-the-floor	'it's possible to eat from the floor'	'the place is extremely clean'
15. <i>efshar lishmoa sika nofelet</i> possible to-hear pin fall	'it's possible to hear a falling pin'	'very quiet'
16. <i>et ha-kesef sofrim ba-</i> acc the-money count on+the- <i>madregot</i> stairs	'they count the money on the stairs'	'the result is what matters'
17. <i>be-eyn cipor shir, gam ha-</i> in-no bird song, also the- <i>orev zamir</i> crow nightingale	'when there's not even one singing bird, the crow is a nightingale'	'when the times are tough, you do with what you have'
18. a. <i>baal ha-mea hu baal</i> owner the-hundred is owner <i>ha-dea</i> the-opinion DEC	'the owner of the hundred is the owner of the opinion'	'the one making money is the one whose opinion counts'
b. <i>baal ha-mea #ha-shava</i> owner the-hundred the-worth <i>hu baal ha-dea #ha-</i> <i>nixshevet</i> is owner the opinion the- considered	'owner of the worthy hundred is the owner of the respected opinion'	--
c. <i>baal ha-dea hu baal ha-</i> <i>mea</i> owner the-opinion is owner the-hundred	'the owner of the opinion is the owner of the hundred'	?? 'the one making money is the one whose opinion counts'
19. <i>gava har beynehem</i> grew mountain between+them	'a mountain grew between them'	'their paths diverged'
20. <i>gdiim naasu</i> young+goats became <i>tayashim</i> billy+goats	'young goats became billy goats'	'the young generation grew'
21. <i>din pruta ke-din mea</i> case cent as-case hundred	'the case of a cent is the same as that of a hundred'	'small issues are as important as the big issues'
22. a. <i>darko suga be-</i> <i>shoshanim</i> way-his surrounded in-roses DEC	'his way is surrounded with roses'	'his future is bright'

<p>b. <i>darko #ha-aruka suga be-shoshanim #gdolot/#vrudot</i> way-his the-long surrounded in-roses big/pink</p> <p>c. <i>??be-shoshanim suga darko</i> with-roses surrounded way-his</p>	<p>‘his (long) way is surrounded with big/pink roses’</p> <p>‘his way is surrounded with roses’</p>	<p>--</p> <p>--</p>
<p>23. <i>ha-ahava hi iveret</i> the-love is blind</p>	<p>‘love is blind’</p>	<p>‘love places no boundaries’</p>
<p>24. a. <i>ha-dag masriax me-ha-rosh</i> the-fish stinks from-the-head DEC</p> <p>b. <i>ha-dag #ha-ze/#ha-mefursam masriax me-ha-rosh</i> the-fish the-this/the-famous stinks from-the-head</p> <p>c. <i>#me-ha-rosh ha-dag masriax</i> from-the-head the-fish stinks</p>	<p>‘the fish stinks from the head’</p> <p>‘this/the famous fish stinks from the head’</p> <p>‘the fish stinks from the head’</p>	<p>‘the issue is rotten from the core’</p> <p>--</p> <p>--</p>
<p>25. <i>hediot kofec ba-rosh</i> layman jumps at-head</p>	<p>‘the layman jumps first’</p>	<p>‘the stupid person will jump ahead of others to express himself’</p>
<p>26. <i>ha-derech le-gehenom recufa</i> the-road to-hell paved <i>kavanot tovot</i> intentions good</p>	<p>‘the road to hell is paved with good intentions’</p>	<p>‘good intentions do not necessarily mean good results’</p>
<p>27. a. <i>ha-deshe shel ha-shaxen</i> the-grass of the-neighbor <i>yarok yoter</i> green more DEC</p> <p>b. <i>ha-deshe #ha-xadash shel</i> the-grass the-new of <i>ha-shaxen #ha-ashir yarok</i> the-neighbor the-rich green <i>yoter</i> more</p> <p>c. <i>etmol giliti she</i> yesterday discovered that</p>	<p>‘the neighbor’s grass is greener’</p> <p>‘the (new) grass of the rich neighbor is greener’</p>	<p>‘it always seems that others are better off than you are’</p> <p>--</p> <p>?? ‘yesterday I found out that others are better off than myself’</p>

<i>yarok yoter, ha-deshe</i> green more the-grass <i>shel ha-shaxen</i> of the-neighbor	‘yesterday, I discovered that the neighbor’s grass is greener’	
28. <i>ha-hacaga xayevet lehimashe</i> the-show must to-continue	‘the show must go on’	‘the show must go on’
29. <i>hushlax le-gov ha-arayot</i> thrown in-den the-lions	‘thrown into lion’s den’	‘was forced to endure a battle with strong forces’
30. <i>ha-zeev savea ve-ha-kivsa</i> the-wolf full and-the-sheep <i>shlema</i> whole	‘the wolf is satiated and the sheep is whole’	‘everyone is satisfied’
31. <i>ha-zorim be-dima, be-rina</i> the-sowers in-tear, in-joy <i>yekacru</i> will+reap	‘those sowing in tears, will reap with joy’	‘the hard work will pay off’
32. <i>ha-zanav mekashkesh ba-kelev</i> the-tail rules the-dog	‘the tail rules the dog’	‘a person/force of a lower rank rules the person/force of a higher rank’
33. <i>ha-xayim ve-ha-mavet be-yad ha-lashon</i> the-life and-the-death in-hand the-tongue	‘life and death is at the hand of the tongue’	‘words can determine one’s destiny’
34. <i>ha-xaxam eynav be-rosho</i> the-smart eyes+his in-head+his	‘the eyes of a smart person are in his head’	‘wise people look clearly at the reality around them’
35. <i>ha-yain nishpax ke-mayim</i> the-wine spilled like-water	‘the wine spilled like water’	‘the party/event had lots of wine to drink’
36. <i>hakol biglal masmer katan</i> all because nail little	‘all because of a little nail’	‘what started the events was a small and insignificant moment’
37. <i>ha-kala yafa miday</i> the-bride pretty much	‘the bride is too pretty’	‘something is suspicious’
38. <i>ha-keseef yaane al ha-kol</i> the-money answer on the-all	‘the money will answer everything’	‘money will solve everything’
39. <i>ha-layla od cair</i> the-night is young	‘the night is young’	‘all can still happen’
40. <i>halax ha-xevel axrey ha-dli</i> went the-rope after the-bucket	‘the rope went after the bucket’	‘after first loss, another loss is inevitable’
41. <i>ha-niyar sovel hakol</i>	‘the paper tolerates everything’	‘everything can be written on paper’

the-paper tolerates all		
42. <i>ha-eynaim hem rei ha-the-eyes are mirror the-neshama soul</i>	‘eyes are the mirror of the soul’	‘the soul is reflected in one’s eyes’
43. <i>ha-pe she-asar hu ha-the-mouth that-stopped is the-pe she-hetir mouth that-allowed</i>	‘the one who forbade, is the one who allowed’	‘one with law at his hands is free to change the law anytime’
44. <i>ha-pinkas patuax ve-ha-the-notepad open and-the-yad roshemet hand writes</i>	‘the notebook is open and the hand writes’	‘one day your punishment will come’
45. a. <i>ha-pishpesh ala lemaala the-flea rose upstairs</i> DEC	‘the flea rose upstairs’	‘the lower person is now at a high position’
b. <i>ha-pishpesh #ha-the-flea the-mefursam/#ha-muclax famous/the-successful ala lemaala rose upstairs</i>	‘the famous/successful flea rose upstairs’	--
c. <i>shamata? lemaala ala heard-u? upstairs rose ha-pishpesh the flea</i>	‘did you hear? upstairs rose the flea!’	--
d. <i>lifney shavua ala ha-before week rose the-pishpesh lemaala flea upstairs</i>	‘a week ago, the flea rose upstairs’	--
46. <i>ha-shem yakum damo the-name will+revenge blood+his</i>	‘God will revenge for his blood’	‘one day his loss will be revenged for’
47. a. <i>ha-smixa kcara miday the-blanket short much</i> DEC	‘the blanket is too short’	‘there’s not enough for everyone’
b. <i>ha-smixa #ha-xadasha/#ha-the-blanket the-new/the-gdola kcara miday big short much</i>	‘the new/big blanket is too short’	--
c. <i>??hem amru she kcara</i>		--

they said that short <i>miday ha-smixa</i> much the-blanket	‘they said that the blanket was too short’	
48. <i>ha-shemesh zarxa, ha-shita</i> the-sun shined, the-acacia <i>parxa ve-ha-shoxet</i> flowered and-the-butcher <i>shaxat</i> killed	‘the sun shined, the flowers blossomed, and the butcher killed’	‘Jews are being murdered in full light of day’
49. <i>ha-gonev mi-ganav patur</i> the-stealing from-thief exempt	‘the stealing from thief is exempt (from charge)’	‘whoever commits crime against criminals is not a criminal’
50. <i>tashpil et acmexa</i> emparass acc yourself	‘embarrass yourself’	‘give up on man’s etiquette’
51. <i>(she) tishbor regel</i> (that) break-you leg	‘may you break a leg!’	‘good luck!’
52. <i>tidbak leshoni le-xexi</i> glue-fut. tongue-mine to-palate- mine	‘my tongue will glue to my palate’	‘I won’t be able to talk’
53. <i>shlax laxmexa al pney ha-</i> send bread-yours on face the- <i>mayim</i> water	‘send your bread on the water’	‘better to try out a new idea, even if its success is uncertain, than do nothing’
54. <i>seyva zarka be-searo</i> white-hair threw in-hair+his	‘a white hair threw onto his hair’	‘he got old’
55. <i>she-yevusam lexa</i> that-perfumed-fut to+you	‘may you be perfumed!’	an ironic praise for someone doing something wrong
56. <i>rashanti lefanay</i> wrote-I in+front+of+me	‘I wrote (it) in front of me’	‘your claim has been noted’
57. a. <i>ruxot xadashot menashvot</i> winds new blow DEC b. <i>ruxot xadashot #me-ha-</i> winds new from-the <i>mizrax menashvot #xazak</i> east blow strongly c. <i>be-mizrax ha-tixon</i> in-east the-middle <i>menashvot ruxot xadashot</i> blow winds new	‘new winds are blowing’ ‘new (strong) winds are blowing strongly’ ‘in the middle east, new winds are blowing’	‘a change is here’ -- ?? ‘there’s a change in the middle east’

58. <i>korcu me-oto ha-xomer</i> formed from-same the-material	'formed from the same material'	'very similar'
59. <i>kol kore ba-midbar</i> voice cry at+the-desert	'a voice is crying at the desert'	a plea to hear what no one is willing to hear
60. <i>cipor ktana laxasha li</i> bird little whispered to+me	'a little bird whispered to me'	'I found out'
61. <i>al rosh ha-ganav boer ha-on</i> on head the-thief burns the- <i>kova</i> hat	'on a thief's head the hat is burning'	'it's easy to recognize a villain'
62. <i>avarnu et paro</i> passed-we acc Pharaoh	'we've passed Pharaoh'	'we've overcome the difficulty'
63. <i>nikra el ha-degel</i> called to the-flag	'called to the flag'	'asked to take part in public act/speech'
64. <i>nistam alav ha-golel</i> closed on+him the-golel	'the golel (a type of stone used for burial) closed on him'	'he lost his hope'
65. <i>neemar be-neshima axat</i> said in-breath one	'said in one breath'	'uttered quickly'
66. <i>ze lexem bishvilo</i> this bread for-him	'this is bread for him'	'this is basic for him'
67. <i>tipesh zorek even la-beer</i> fool throws stone to+the-well	'a fool throws a stone to the well'	'a stupid person creates his own problems'
68. <i>yad roxecet yad</i> hand washes hand	'one hand washes another'	a sign for mutual protection (in e.g. business)
69. <i>yoter mima she-ha-egel roce</i> more than that-the-calf wants <i>linok, ha-para roca</i> to-suckle, the-cow wants <i>lehanik</i> to-nurse	'more than the calf wants to suckle, the cow wants to nurse'	'more than a student wants to learn, the teacher wants to teach'
70. <i>yake yosi et yosi</i> hit-fut yosi acc yosi	'yosi will hit yosi'	a sign for inner conflict
71. <i>yaca ve-oznav mekutafot</i> came-out and-ears+his torn	'came out without his ears'	'returned without achieving anything'
72. <i>yifrexu mea praxim</i> flower-fut hundred flowers	'a hundred flowers will flower'	'there's room for many different ideas'
73. <i>keilu bal'a oto ha-adama</i>	'as if the earth swallowed him'	'disappeared'

as-if swallowed him the-earth		
<p>74. a. <i>kol matate yore</i> every broomstick fires <u>DEC</u></p> <p>b. <i>kol matate #xadash yore</i> every broomstick new fires <i>#bul la-matara</i> exactly to+the-goal</p> <p>c. <i>taxat ha-hanhala ha-</i> under the-direction the- <i>xadasha, yore kol matate</i> new, fires every broomstick</p>	<p>‘every broomstick fires’</p> <p>‘every new broomstick fires exactly to the goal’</p> <p>‘under the new direction, every broomstick fires’</p>	<p>‘every action has a result’</p> <p>--</p> <p>--</p>
<p>75. a. <i>kol ha-draxim movilot le-</i> all the-roads lead to- <i>roma</i> rome <u>DEC</u></p> <p>b. <i>kol ha-draxim #ha-</i> all the-roads the- <i>shonot/#ha-merkaziot</i> different/the-central <i>movilot le-roma</i> lead to-rome</p> <p>c. <i>movilot le-roma, kol ha-</i> lead to-rome, all the- <i>draxim</i> roads</p>	<p>‘all roads lead to Rome’</p> <p>‘all the-different/central roads lead to Rome’</p> <p>‘all the roads lead to rome’</p>	<p>‘everything points in the same direction’</p> <p>--</p> <p>?? ‘everything points in the same direction’</p>
<p>76. a. <i>kshe xotvim ecim afim</i> when cut-down trees fly <i>shvavim</i> shavings <u>DEC</u></p> <p>b. <i>kshe xotvim ecim</i> when cut-down trees <i>#gdolim/nokshim afim</i> big/tough fly <i>shvavim #rabim</i> shavings many</p> <p>c. <i>shvavim afim, kshe</i> shavings fly, when <i>xotvim ecim</i> cut-down trees</p>	<p>‘shavings fly when we cut down trees’</p> <p>‘(many) shavings fly when we cut down big/tough trees’</p> <p>‘shavings fly when we cut down trees’</p>	<p>‘when doing, problems arise’</p> <p>--</p> <p>?? ‘when doing, problems arise’</p>

<p>77. a. <i>kshe nagia la-gesher</i> when arrive to+the-bridge <i>naavor oto</i> cross it <u>DEC</u></p> <p>b. <i>kshe nagia la-gesher</i> when arrive to+the-bridge <i>#ha-raxok/ha-mafxid,</i> the-far/the-scary <i>naavor oto</i> cross it</p> <p>c. <i>naavor et ha-gesher</i> cross acc the-bridge <i>kshe nagia elav</i> when arrive to+it</p>	<p>‘we’ll cross the bridge when we reach it’</p> <p>‘when we reach the far/scary bridge, we’ll cross it’</p> <p>‘we’ll cross the bridge when we reach it’</p>	<p>‘we’ll solve the problem once it arises’</p> <p>--</p> <p>?? ‘we’ll solve the problem once it arises’</p>
<p>78. a. <i>le-kol sir yesh mixse</i> to-each pot is lid <u>DEC</u></p> <p>b. <i>le-kol sir #she-hu/meyuxad</i> to-each pot that-is/unique <i>yesh mixse #matim</i> is lid suitable</p> <p>c. <i>mixse yesh le-kol sir</i> lid is to-each pot</p>	<p>‘every pot has a lid’</p> <p>‘to each (and every/unique) pot there’s a suitable lid’</p> <p>‘every pot has a lid’</p>	<p>‘everyone has a perfect match’</p> <p>--</p> <p>--</p>
<p>79. <i>meaz zarmu harbe</i> from-then flowed much <i>mayim be- yarden</i> water in-Yarden</p>	<p>‘since then lots of water flowed in (the river) Yarden’</p>	<p>‘a lot has changed since then’</p>
<p>80. <i>medabrim al ha-xamor</i> talk on the-donkey <i>ve-ha-xamor ba</i> and-the-donkey comes</p>	<p>‘talk about the donkey (and it will come)’</p>	<p>‘here’s the person we just discussed!’</p>
<p>81. <i>ma she-mutar le-upiter</i> what that-allowed for-Jupiter <i>asur le-par</i> forbidden for-bull</p>	<p>‘what is allowed for Jupiter, is forbidden for a bull’</p>	<p>‘law depends on one’s status’</p>
<p>82. a. <i>mayim gnuvim yimtaku</i> water stolen will+be+sweet <u>DEC</u></p>	<p>‘stolen water will appear as sweet’</p>	<p>‘what has been attained illegally is extra special/dear’</p>

<p>b. <i>mayim gnuvim #be-or yom</i> water stolen in-light-day <i>yimtaku #la-ganav</i> will+be+sweet to+the-thief</p> <p>c. <i>kmo she-omrim, yimtaku</i> like that-say will+be+sweet <i>mayim gnuvim</i> water stolen</p>	<p>‘water stolen (in light of day) will appear as sweet to the thief’</p> <p>‘like they say, stolen water will appear as sweet’</p>	<p>--</p> <p>?? ‘like they say, what has been attained illegally is extra special/dear’</p>
<p>83. a. <i>mayim shketim xodrim amok</i> water quiet penetrate deep DEC</p> <p>b. <i>mayim shketim #ve-reguim</i> water quiet and calm <i>xodrim amok #la-lev</i> penetrate deep in+the-heart</p> <p>c. ??<i>kmo she-omrim, xodrim</i> like that-say penetrate <i>amok, mayim shketim</i> deep water quiet</p>	<p>‘quiet water penetrate deeply’</p> <p>‘quiet (and calm) water penetrate deeply into the heart’</p> <p>‘like they say, quiet water penetrate deeply’</p>	<p>‘peaceful and quiet ideas influence/stay longer’</p> <p>--</p> <p>--</p>
<p>84. <i>carix shnayim le-tango</i> need two for-tango</p>	<p>‘you need two for tango’</p>	<p>‘you cannot do (this) alone’</p>
<p>85. <i>ma akac oto?</i> what bit him</p>	<p>‘what bit him?’</p>	<p>‘why is he so nervous?’</p>
<p>86. <i>le-ma hitkaven ha-meshorer?</i> to-what meant the-poet</p>	<p>‘what did the poet mean?’</p>	<p>‘what is behind this?’</p>
<p>87. <i>le-mi cilcelu ha-paamonim</i> to-whom rang the-bells</p>	<p>‘to whom did the bells wring?’</p>	<p>‘who should be left in charge on the task?’</p>
<p>88. <i>ma nisgar?</i> what closed</p>	<p>‘what was closed?’</p>	<p>‘what is the outcome?’</p>
<p>89. <i>ma yagidu ha-shxenim ?</i> what say-fut the-neighbors</p>	<p>‘what will the neighbors say?’</p>	<p>‘one needs to consider the community around him before taking an action’</p>
<p>90. <i>ma le-kohen be-beyt kvarot?</i> what to-priest in-house graves</p>	<p>‘what does a priest do at a cemetery?’</p>	<p>‘why does he spend time on issues he shouldn’t be dealing with (i.e. lower than his rank)’</p>
<p>91. <i>ma mitbashel?</i> what cooking</p>	<p>‘what is cooking?’</p>	<p>‘what is going on?’</p>
<p>92. <i>mi yegale afar mi-eynav?</i> who discover-fut ashes from-</p>	<p>‘who’ll uncover ashes from his eyes?’</p>	<p>‘if he were alive, he would have been angry with the events’</p>

eyes+his		
93. a. <i>shney cdadim la-matbea</i> two sides to+the-coin DEC	‘the coin has two sides’	‘there are two ways to look at it’
b. <i>shney cdadim #shonim la-</i> two sides different to+the- <i>matbea #she-ata maxzik ba-</i> coin that-you hold in+the- <i>yad</i> hand	‘the coin (that you’re holding in your hand) has two different sides’	--
c. <i>la-matbea shney cdadim</i> to+the-coin two sides	‘the coin has two sides’	‘there are two ways to look at it’
94. <i>ze sinit bishvili</i> this Chinese for+me	‘this is Chinese for me’	‘I don’t understand’
95. <i>ze rak sport</i> it only sport	‘it is only sport’	‘it should be taken more lightly’
96. a. <i>kulanu be-ota sira</i> we+all in-same boat DEC	‘we’re all in the same boat’	‘we’re together in this’
b. <i>kulanu be-ota sira</i> we+all in-same boat <i>#ktana/#cfufa</i> small/packed	‘we’re all in the same tight/small boat’	--
c. <i>be-sofo shel davar,</i> in-end of thing <i>be-ota sira kulanu</i> in-same boat we+all	‘at the end, we’re all in the same boat’	--
97. a. <i>kuli ozen</i> i+all ear	‘I’m all ear’	‘I’m listening’

II. Obligatory Negation

Idiom	Literal	Idiomatic
1. <i>adam eino i</i> man not island	‘the man isn’t an island’	‘no man is alone’
2. <i>eyn adam nitpas be-shat</i> no man caught in-hour <i>ca’aro</i>	‘man shouldn’t be caught in the hour of his sadness’	‘don’t judge someone at hard times’

his-sadness		
3. <i>eyn or bli cel</i> no light w/o shadow	‘no light w/o darkness’	‘nothing is perfect’
4. <i>eyn exad le-refua</i> no one for-medicine	‘there’s not even one person for medicine’	‘there’s no one’
5. <i>eyn aruxot xitam</i> no free meals	‘there are no free meals’	‘nothing’s free’
6. <i>eyn boxim al xalav she-nishpax</i> no cry on milk that-spilled	‘you don’t cry for spilled milk’	‘what’s happened, happened’
7. <i>eyn ha-bor mitmale mi-xuliyato</i> no the-pit fills from-parts-his	‘the pit doesn’t become full by the sum of its parts’	‘the task cannot be completed without outside help’
8. <i>eyn ha-naxtom meid al isato</i> no the-baker testify about dough-his	‘the baker doesn’t testify about his dough’	‘one cannot tell others objectively about his own work’
9. <i>eyn xadash taxat ha-shemesh</i> no new under the-sun	‘nothing is new under the sun’	‘all is as it was before’
10. <i>eyn koxo ela be-piv</i> no power-his but in-mouth-his	‘his power is only in his mouth’	‘someone who talks a lot, without doing anything’
11. <i>eyn lo ax ve-rea</i> no to-him brother and –friend	‘there’s no brother nor friend to him’	‘there’s no one like him’
12. <i>eyn lo xelek ba-olam ha-ba</i> no to-him part in-the-world the-next	‘there’s no part for him in the next world’	‘someone who hurts others will not be forgiven’
13. <i>eyn lo yad ve-regel</i> no to-him hand and-foot	‘he doesn’t have a hand nor a foot’	‘useless’
14. <i>eyn lo lev</i> no to-him heart	‘he doesn’t have a heart’	‘ruthless’
15. <i>eyn le-ze shaxar</i> no to-this sunrise	‘this doesn’t have a sunrise’	‘this is just rumours’
16. <i>eyn lexa adam she-eyn lo shaa</i> no to-you man that-no to-him	‘you don’t have a man without his hour’	‘everyone will die at the end’

hour		
17. <i>eyn melex be-israel</i> no king in-israel	‘there’s no king in israel’	‘a chaos and disorder’
18. <i>eyn navi be-iro</i> no prophet in-town-his	‘there’s no prophet in his own town’	‘it’s hard to get recognition at your own home/country’
19. <i>eyn ashan bli esh</i> no smoke without fire	‘there’s no smoke without fire’	‘everything has a reason’
20. <i>eyn kategor neesa</i> no prosecutor becomes <i>sanegor</i> defender	‘a prosecutor doesn’t become a defender’	‘you can’t change your nature’
21. <i>al yitholel xoger ke-</i> don’t brag soldier as- <i>mafteax</i> higher-ranked soldier	‘a soldier will not brag as a higher-ranked soldier’	‘one shouldn’t brag about future success’
22. <i>al tistakel ba-kankan</i> don’t look at-the-pitcher	‘don’t look at the pitcher’	‘don’t judge a book by its cover’
23. <i>al tiftax pe la-satan</i> don’t open mouth to-the-devil	‘don’t open a mouth to the devil’	‘don’t say negative things as they might come true’
24. <i>al tekashkesh ba-kumkum</i> don’t babble in-the-kettle	‘don’t babble in the kettle’	‘don’t tell stories, rumours’
25. <i>elohim noten egozim le-mi</i> god gives nuts to-who <i>she-eyn lo shinaim</i> that-not to-him teeth	‘god gives nuts to those that have no teeth’	‘god endows with gifts those that cannot use them’
26. <i>im eyn kemax, eyn tora</i> if no flour, no bible	‘if there’s no flour, there’s no bible’	‘the basic needs must be satisfied in order to develop spiritually’
27. <i>et ha-mangina ha-zo i</i> acc the-tune the-this <i>efshar lehafsik</i> impossible to-stop	‘it’s impossible to stop this tune’	‘one must go on’
28. <i>bor she-shatita mimeno, al</i> pit that-drunk from-it, don’t <i>tizrok bo even</i> throw in-it stone	‘don’t throw a stone in a pit that you drank from’	‘don’t turn your back on that which helped you to reach your current stage’
29. <i>be-maarav eyn kol xadash</i> in-west no all new	‘nothing is new in the west’	‘all is normal’

30. <i>ha-shamayim lo naflu</i> the-skies not fall	‘the skies didn’t fall’	‘despite of the worries, nothing terrible has happened’
31. <i>im ze lo holxim la-makolet</i> with this not go-pl to+the-store	‘you don’t go to the store with this’	‘this is not good enough’
32. <i>ha-tavla lo meshakeret</i> the-table not lie	‘the table doesn’t lie’	‘one shouldn’t argue with the facts’
33. <i>eynam asuyim me-or exad</i> not+they made from-skin one	‘not made from one skin’	‘different’
34. <i>zo lo mila gasa</i> this not word rude	‘this isn’t a rude word’	‘one shouldn’t be afraid of it’
35. <i>zkeney cfat lo zoxxim</i> old+men Zfat not remember	‘the old men of Zfar don’t remember’	an ironic expression of wonder
36. <i>ze lo nigmar ad she-ha-gveret ha-shmena shara</i> lady the-fat sings	‘this isn’t over until the fat lady sings’	‘it’s not over yet, one needs to wait the end of the event’
37. <i>yad smol lo yodaat ma yad yamin osa</i> hand left not know what hand right does	‘the left hand doesn’t know what the right hand does’	‘there’s lack of communication between the members of a group/enterprise’
38. <i>yadeynu lo shafxu et ha-dam ha-ze</i> hands+our not pour acc the-blood the-this	‘our hands didn’t pour this blood’	‘we aren’t responsible’
39. a. <i>kaxa lo bonim xoma</i> this+way not build wall DEC	‘this isn’t how you build a wall’	‘this isn’t the right way to do it’
b. <i>kaxa lo bonim xoma</i> this+way not build wall #yeciva stable	‘this isn’t how you build a stable wall’	--
c. <i>amarti lexa she lo bonim xoma kaxa</i> I+told you that not build wall this+way	‘this isn’t how you build a wall’	?? ‘I told you that this isn’t the right way to do it’
40. <i>kelev noveax eyno noshex</i> dog barking not bite	‘a barking dog doesn’t bite’	‘a lot of noise usually means little action’
41. <i>kesev lo comeax al ha-ecim</i>	‘money doesn’t grow on trees’	‘one needs to work hard for money’

money not grow on the-trees		
42. <i>lo megia le-karsulav</i> not reach to-ankle+his	‘doesn’t reach his ankles’	‘not worthy’
43. <i>lo henid afaf</i> not move eyelid	‘didn’t move an eyelid’	‘did nothing’
44. <i>lo hishir even al even</i> not leave stone on stone	‘didn’t leave a stone on stone’	‘carefully scrutinized, examined’
45. <i>lo kol ha-nocec zahav</i> not all the-glitters gold	‘not all that glitters is gold’	‘one should be careful with first impressions’
46. <i>lo maxlifim susim ba-aliya</i> not change horses in-rise	‘you don’t change horses going up-hill’	‘no changes should be made at the heart of action’
47. <i>lo mesugal lifgoa be-zvuv</i> not able hurt in-fly	‘unable to hurt a fly’	‘harmless’
48. <i>lo moce et ha-yadayim ve-</i> not find acc the-hands and- <i>ha-raglayim</i> the-legs	‘can’t find one’s hands and legs’	‘confused’
49. <i>lo nakaf ecba</i> not point finger	‘didn’t point his finger’	‘did nothing to help’
50. <i>le-sheker eyn raglayim</i> to-lie no feet	‘lie doesn’t have feet’	‘lies will eventually be revealed’
51. <i>mi-rov ecim lo roim et</i> from-most trees not see acc <i>ha-yaar</i> the-forest	‘from all the trees one can’t see the forest’	‘focusing on details makes it hard to see the picture as a whole’
52. <i>adayin lo neemra ha-mila</i> still not said the-word <i>ha-axrona</i> the-last	‘the last word hasn’t been said yet’	‘the outcome is unclear’
53. <i>rak xamor lo meshane et</i> only donkey not change acc <i>daato</i> mind+his	‘only a donkey doesn’t change his mind’	‘all changes’
54. <i>i efshar leexol et ha-uga</i> no possible eat acc the-cake <i>ve-lehashir ota shlema</i> and-leave it complete	‘it’s impossible to eat the cake and leave it whole’	‘you must choose’

<p>55. <i>i efshar lehaxzir galgal</i> no possible return wheel <i>le-axor</i> to-back</p>	<p>‘it’s impossible to return the wheel to the back’</p>	<p>‘past cannot be returned to’</p>
<p>56. <i>i efshar lehaxzir et mexogey</i> no possible return acc hands <i>ha-shaon</i> the-clock</p>	<p>‘hands of the clock cannot be returned’</p>	<p>‘past cannot be returned to’</p>
<p>57. <i>i efshar lehaxnis sika</i> no possible insert pin</p>	<p>‘you cannot insert a pin’</p>	<p>‘no place at all’</p>

6. Summary

In this dissertation, I examined in detail the properties of different idiomatic expressions in two languages, namely, Russian and Hebrew. We have seen that both languages exhibit the distinction proposed in the TSS model of Horvath & Siloni (2012) between phrasal and clausal idioms.

Specifically, we have seen that in both languages, phrasal idioms are significantly more prevalent than clausal idioms. In addition, we have seen that in both languages, clausal idioms are significantly more rigid to syntactic permutations than phrasal idioms. Lastly, we have seen that Hebrew provides robust evidence for the existence of unique clausal idioms with verbal passives; unique phrasal idioms with verbal passives were unattested in both languages. This cluster of properties follows directly from the TSS model, according to which storage of idioms is type-specific, with clausal idioms stored independently from their subentries, on a separate list, and phrasal idioms stored under their verbal (or adjectival) heads.

This leads us to answer the question of idiom storage, central to this dissertation. We have seen, therefore, that both mechanisms – that is, independent storage and head-based storage – are utilized, each in a different case. We have also seen empirical evidence suggesting that independent storage is the more marked mechanism among the two.

From the properties of idiomatic expressions, then, we have learnt about the storage methods available in the mental lexicon. Additionally, we have learnt about the amount of information that must be encoded in the lexicon, namely, category and diathesis specification. Only under the assumption that this information is specified can we account for the existence of unique idioms with unaccusatives, transitives and adjectival passives in both languages. Similarly, only under the assumption that this information is specified can we account for the existence of unique semantic drifts with unaccusatives, transitives, and adjectival passives in the sub-standard variant of Russian.

Finally, we have also examined the way young children acquire idiomatic expressions in Hebrew. This being a seminal study, we nevertheless saw that third graders have little difficulty understanding various types of idioms – while they have a tremendous difficulty with their completion. Additionally, we saw that across the two age groups (namely, second and third-graders), decomposable idioms were found to be more difficult for children to complete. An initial suggestion proposed in Fadlon et al. (2012) ties this difference to the ‘wiring’ of non-decomposable idioms with a full-fledged concept, allowing for another means to retrieve them from the mental lexicon. Clearly, this suggestion must be made more articulate and precise. Hopefully, future research will shed light on this and other questions raised in the course of this study and left open, for the time being.

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