Original Paper

Bridging the Semantic Gap

Dalit Wasserman-Amir[1*]

[1] Kibbutzim College of Education, Technology and the Arts, Tel Aviv, Israel

[*] Dalit Wasserman-Amir, Kibbutzim College of Education, Technology and the Arts, Tel Aviv, Israel

Abstract

The present research explores how Hebrew speakers derive meaning from distant noun collocations drawn from the poetry of Yehuda Amichai. The research participants completed a questionnaire where they had to rate the distance between collocated nouns extracted from Yehuda Amichai's poetry and propose a connection between them without receiving any context or explanation. The questionnaires' analysis offers a glimpse into the diverse ways in which the responders attempted to reconcile distant nouns. Their solutions included phonetic and morphological associations, morphological derivations, and even back-formations based on homonyms. Their solutions indicate that language speakers make great efforts to find semantic affinity even when the combination between distant word pairs appears meaningless.

Keywords

semantic, fields, metaphors

1. Background

Recent decades have seen philosophical, psychological, cultural, and other debates over figurative metaphorical expressions. Lakoff and Johnson's groundbreaking research (1980) drew linguistic attention to difficulties and insights metaphors evoke in a discourse but neglected giving broad linguistic attention to the creative metaphors' phenomenon. Lakoff and Turner's study (1989) reversed this situation. However, instead of emphasizing the uniqueness of poetic metaphors they pointed out similarities between metaphors in poetry and metaphorical discourse patterns such as "life is a journey". In the case of creative metaphors, great tension exists between their parts that connect unpredictably distant semantic fields. While this is exactly the power of poetical language, it is also the source of difficulty in decoding phrases such as the title of a poem by the Israeli poet Rachel (Bluwstein) *pirkhei ulai* [perhaps flowers]. The present study explores the decoding challenge embedded in the concept "semantic distance".

Sovran (2006) proposed to characterize semantic distance as preventing two-word combinations from producing an immediate picture of the state of affairs in the world. As an example, she pointed out the semantic gap between the words *arafel gufekh* [the fog of your body] in Alterman's poem *itakh bil'adaikh* [With You Without You]. The view implied by this innovative metaphorical compound is far from the straightforward interpretation of "fog", as planted in the semantic field "precipitation", and far from immediately suggesting body organs. Finding a connection between "fog" and "your body" in the poem's first line *al arafel gufekh gufi mitga'age'a* [my body longs for the fog of your body] requires mental effort. Decoding may lean on hints strewn throughout the poem and on its oxymoronic title *itakh bil'adaikh* [With you without you].

Metaphor as a Token of Semantic Distance

The present research focuses on the linguistic concept of Semantic Distance. In a sense, this concept stands in contrast to the earlier Semantic Field concept and its recent counterpart Semantic Framework. The two latter concepts highlight the semantic relationship between words and their organization in the mental lexicon. The concept of semantic fields was first proposed by the German linguist Trier as referring to related concepts that encompass similar realms of meaning (e.g., the field of wisdom). De Saussure significantly influenced the formulation of this concept, having stated in 1916 that the meaning of a word is derived from its differences from and contrasts with its neighboring terms in the mental system. In 1931, Trier and his colleagues showed how words related to a central word create a lexical map surrounding that word. Trier followed de Saussure in stating that a word is not stored in isolation in the minds of speakers and hearers. To determine the meaning of a word we must compare and contrast it with its semantic field neighbors (Nerlich & Clarke, 2000). Fillmore and Atkins later developed this idea in their Framework Theory (1992) and in the computerized project FrameNet (1997), a dictionary that organizes concepts by their frame of reference and determines their semantic and syntactic status through sentences taken from the British National Corpus (BCN).

Sovran (1988) characterized the affinity between metaphors and semantic fields as follows: A word belongs to a given field if it has many connections, especially synonymous ones, with close words in the field. In contrast, the indicating word is a metaphor if it is "borrowed" for this field and belongs to another field. The word "smell" is a metaphor in the field of imagination, for example, in the sentence "Their meeting smelled of conspiracy". It belongs to another semantic field in which it associates to words such as *af* (nose), *nodef* (gives off), *avir* (air), *bosem* ("perfume").

Several theories link the "semantic field" concept with the "metaphor" concept. Black (1962) identified in his theory an interaction between meanings. In Black's view, words interact in a metaphorical expression to produce a meaning that is the result of this interaction. The theory of Lakof and Johnson (Lakof & Johnson, 1980) on "metaphorical mapping" significantly contributed to the development of a cognitive theory of metaphor. Kittay's semantic fields theory (Kittay, 1987) shares with Lakof and Johnson the notion that one part of a metaphor revolutionizes the understanding of the other part, as one

58

semantic field is "mapped" into another.

In the metaphor "The old rock is dead" used in obituaries for prominent persons, the rock structure is lent to the human realm. Terms such as strength, cracking, and shattering are borrowed to express the death of an exceedingly strong person (Kittay, 1987). As mentioned, in recent decades, neuroscientists have given attention to the metaphor phenomenon, supporting their studies by state-of-the-art technological means such as fMRI. Yet, researchers are not in consensus about explaining neurological processes that occur while decoding creative metaphors. Below is a brief overview of the various current approaches.

2. Neurolinguistic Approaches to Understanding Metaphors—Achievements, Arguments, and Limitations

Various neurolinguistic theories generate new experiments that shed light on brain activity. Studies have used modern equipment to examine the contribution of each brain hemisphere to the processing of words and compounds. Most of the neurolinguistic studies are quantitative and lean on technological means such as fMRI and PET. Many neurolinguistic studies (Bottini et al., 1994; Brownell, Potter, Michellow, & Gardner, 1984; Chiarello, Burges, Richards, & Pollock, 1990; Winner & Gardner, 1977) suggest a preference for the left hemisphere in word processing and the right hemisphere in processing metaphors. Two theories that attempt to explain the difference between hemispheres in word processing are the fine/coarse semantic coding theory (FCT), formulated by Beeman (Beeman, 1993, 1998; Beeman et al., 1994) and the Graded Salience Hypothesis model (GSH) developed by Giora (Giora, 1997, 2002, 2003). FCT addresses the nature of semantic activation. Beeman claims that the right hemisphere evokes weak but broad semantic fields, while the left hemisphere accurately encodes narrow semantic fields that contain only the most central aspects of meaning. He hypothesizes that the broader activation of semantic representations in the right hemisphere results in an overlap of certain semantic fields allowing to connect between concepts, activating concepts that link distant words. Assuming that understanding metaphors involves connecting remote aspects of meaning (Beeman, 1998; Bottini et al., 1994; Brownell, 2000), that is, spanning a relatively large semantic distance between compound parts, then according to this model, the coarse mechanisms of the right hemisphere activate them.

The GSH model suggests that two distinct mechanisms are involved in semantic processing. One mechanism is fast and automatic, retrieving key meanings that are common, conventional, and context appropriate. The other mechanism is slow, constructing tentative meanings that are uncommon, unfamiliar, or inappropriate in context. According to this model, rapid retrieval occurs mainly in the left hemisphere.

Faust (2012) suggested that the GSH and FCT models combined imply that the left hemisphere rapidly activates linking and prominent literal or metaphorical meanings. The right hemisphere, in turn, activates and preserves several tentative and weakly linked literal or metaphorical meanings. Thus, both models agree that the left hemisphere has an advantage in processing familiar literal expressions and

conventional metaphors. The right hemisphere, on the other hand, processes better innovative, unfamiliar metaphorical expressions whose parts are semantically far apart.

3. The Alternative: A Linguistic-phenomenological Approach to Deciphering Metaphors

The neurological view, which maintains that the brain, being a biological organ, can be studied in a laboratory, ignores the question of the speaker's awareness and consciousness. Language speakers understand meanings and are partly or wholly aware of their decoding processes. The inherent tension between the neurological and the consciousness, i.e., the phenomenological approach, relates to the broader "body and mind" issue.

In the history of philosophy, no other issue seems to have evoked that much enthusiastic and vigorous controversy and debate as the mind-body problem, i.e., the relations between mental and physical phenomena (Ludwig, 2003). Originating, like many other philosophical questions, in Ancient Greece, where soul and body were regarded as distinct, the modern debate has flourished following the publication of Descartes' ideas. More recently, partly due to the rise of the cognitive sciences in the 1950s and 1960s, interest in this issue "has been booming", in the words of the Oxford Handbook of Philosophy of Mind editors (McLaughlin, Beckermann, & Walter, 2009). This issue now also covers the relationship between the brain as a biological organ and thought and consciousness. The philosopher John Locke (1632-1704) shaped the modern concept of consciousness, defining it as a perception of what goes through the human mind.

Leibowitz (1970) defined consciousness as the phenomenological duality of the physical reality in which the physiology of the nervous system and the psychic reality are included.

This duality has raised many questions and discussions in the history of philosophy. The brain researcher and philosopher Mudrik (Mudrik, 2013) notes three distinct possible descriptions of the core connection between body and mind. The first distinguishes consciousness from the brain, claiming that the brain determines consciousness only partially (or not at all). In contrast, the second claims that consciousness is a physical phenomenon, as is the brain, which fully determines it. Yet another description is that nothing is entirely physical, not even the brain, since we acquire all our knowledge about the brain through our conscious experience of its functioning. These are the three main approaches to the question of body and mind: the materialistic approach (everything is material and biological), the idealistic approach (everything is mental) and the dualistic approach (the material and the conscious are separate entities).

4. The Present Research

In light of the above, this study investigates empirically and phenomenologically the semantic distance embodied in creative metaphors. It examines the cognitive-linguistic strategies used by contemporary

speakers of Hebrew who come across a compound of semantically distant components to uncover how they mediate between them and bring them together to elicit meaning.

The Database

The investigation uses creative compound nouns taken from Yehuda Amichai's poetry. Amichai uses poetic compounds such as *tsehok anavim* [grape laughter], *tofeset dam* [blood tag], or *prutot hesed* [grace pennies]. Such compounds perplex the readers of his poetry, who sometimes have difficulty understanding them. The poet, however, scatters hints throughout the poems, offering connections that give meaning to the compound. I chose Amichai's poetry as my research database due to its surprising compounds displaying varying degrees of distance.

Selected Database

The 27 creative noun compounds appear all in Amichai's poem books *Poems—1948-1962*, *Love Poems*, and *Even a Fist Was Once an Open Palm with Fingers Open closed open* (Appx. 1, 3). Another ten frequently used idiomatic two-word collocations (Appx. 2) served as control.

The respondents were 83 students aged 18 and up. They received noun-pair lists, such as *prahim-ahava* [flowers-love], *haruzim-sakana* (beads-danger), *holot-tfila* [sands-prayer] without any syntactic link or context, and had to rate the semantic distance between them on a 1 to 5 scale, where 1 indicates semantic proximity and 5—semantic distance. They also had to explain the semantic connection between the paired words.

The analysis began by averaging the score of each word pair and categorizing them as follows:1-1.4 – very close semantically, 1.5-2.4—quite close semantically, 2.5-3.4—average semantic distance, 3.5-4.4—semantically distant, 4.5-5—very distant semantically.

Analysis of the respondents' linguistic methods to bridge the semantic gap provided a glimpse into their strategies to elicit meaning.

5. Findings

The results showed that the obtained semantic distance scores ranged from 1.9 to 4.3, i.e., between a small and a considerable semantic distance. The range of scores was much smaller in the control word pairs, which ranged 1.5 to 2.8 (see Appendix 1).

The questionnaires' analysis revealed that the respondents used syntax and morphology, logic, mediating concepts and compounds, phonetics, and lexicon in decoding word pairs made of semantically distant nouns. Following is a description of the different methods used.

5.1 Syntax and Morphology

In some cases, the responders used syntax and morphology to connect between compound components and elicit meaning.

61

Table 1. Syntactic and Morphological Strategies Employed by Respondents

Method	Hebrew compound	Translation	Sem. distance	Explanation
Adding a verb	*prahim – ahava*	flowers – love	1.9	**Bringing** flowers out of love. Flowers express love.
	matseva – ohavim	headstone – lovers	2.6	-Headstones are **ordered**, **placed**, and **inscribed** by loving people. -Those who love **visit** the headstones of their loved ones. -A headstone **perpetuates** the memory of people we love. -People **commemorate** their loved ones by a headstone. -A headstone is a memorial for the dead loved ones.
	tsfarde'im – tsipiya	frogs – expectation	4.2	-The frogs' tadpoles will eventually **become** frogs. -We expect a kiss to **turn** a frog into a prince.
	haruzim - sakana	beads –danger	3.7	Kids might **swallow** beads and choke.
Adding an adjective	*etsim – meshorerim*	trees – poets	3.2	The natural world is very **close** to poets.
Deriving a verb from a noun	*nitsolim – halomot*	survivors – dreams	2.9	-The survivors **dreamed** of being rescued. -Someone who has **survived** has nightmares. -A dream that someone would be **rescued**. -One can't **be rescued** by dreaming.
Deriving an adjective	*kvishim – pere*	roads – savage	3.6	-There are **savage** drivers on the road. -**Savage** driving

Method	Hebrew compound	Translation	Sem. distance	Explanation
				-**Savage** behavior on the roads
	Haruzim – Sakana	Beads – danger	3.7	-If a little kid swallows beads, it will be **dangerous**
				-Beads are **dangerous** for little kids
Deriving a noun from the same root	*kir – ne'umim*	wall – speeches	3.8	Pictures of famous **speakers** [*no'amim*] may appear on a wall
Adding *yesh* [there is], *ein* [there isn't]	*yetomim – tikvot*	orphans – hopes	2.4	-**There is** hope for orphans. -**There are** fewer hopes for orphans. -**There is** hope in adopting children
Adding the prepositional prefix *le-* [to, of, for]	*dgalim – ahava*	flags – love	2.8	Love **of** the homeland and the flags that symbolize it**.**
Pairing	*dgalim – ahava*	flags – love	2.8	**Flag of Love** Parade **Love flag**

5.2 Rationalized Connections

In some cases, the responders used rationalization to connect between the compound components and elicit meaning. Below are the types of rationally elicited connections.

Table 2. Rationalized Connections Employed by Respondents

Method	Hebrew compound	Translation	Sem. distance	Explanation
Semantic similarity	*ruach – rehem*	spirit – womb	3.9	Both indicate life
Similar shape	*galgalim – zman*	wheels – time	2.0	A wheel is round like a clock that shows the time
Metaphorical	*karish – ka'as*	shark – anger	2.9	-A shark is an angry

63

juxtaposition of conversion				animal. - A shark is a predatory fish. - A shark is a violent predatory fish, and anger can lead to violence. -A shark suggests evil, anger, rage.
Equation	*mapa – hayim*	map – life	3.6	Life is like a map without a legend.
Abstraction and reconciliation	*eynaim – yahalomim*	eyes – diamonds	2.8	Both sparkle.
Part of a whole	*anashim – marpekim*	people – elbows	2.6	Elbows are organs in people's bodies.
	guma – guf	dimple/dent – body	2.8	A dimple is a body feature
Location	*guma – guf*	dimple/dent – body	2.8	Dimples appear on the body
Contrast	*kvishim – pere*	roads – savage	3.6	Roads stand for order, while wildness stands for disorder
Causal relation	*shikorim – hayim*	drunk – life	2.8	Someone may be drunk on life. This is a very strong emotion.
	gdudim – ga'aguim	battalions – longing	3.2	A long stay in the military results in longing.
Continuous movement	*galgalim – zman*	wheels – time	2.0	-Time and wheels keep moving. -Time progresses linearly like a wheel advancing in space. -Wheels move fast and so does time.

| Function | *soragim – tsla'ot* | bars – ribs | 3.5 | Bars protect the interior as the human ribs protect the lungs or the heart. |
| | *galgalim – zman* | wheels – time | 2.0 | -Clocks are characterized by gears and a rotary motion -A clock works on wheels. |

5.3 Bridging Concepts

To create meaning, the responders used collocations from an Old Testament verse or story, sometimes using a bridging idea or concept.

Table 3. Bridging Concepts Employed by Respondents

Method	Hebrew compound	Translation	Sem. distance	Explanation
Bible sources	*dgalim – ahava*	flags – love	2.8	"…and his banner over me is love" (Song of songs, 2:4).
	goral – pasim	fate – stripes	3.9	The biblical story of Joseph's fate after Jacob gifted him the striped shirt.
Collocations, proverbs, literary citations	*anashim - zeevim*	people – wolves	2.6	-The proverb (originally Latin, used in Hebrew) "Man is a wolf to other men" (Dog eat dog). -Mythological werewolves may transform into people but will always remain wolves.
Bridging idea	*anashim – zeevim*	people – wolves	2.6	-Both live in packs. -Both frequently act individually.

Method	Hebrew compound	Translation	Sem. distance	Explanation
Bridging concept	*orkim – mapot*	arteries – maps	3.0	-Both seek to survive. -Both are mammals. Both share the concept of movement/flow.

5.4 Phonetics

Table 4. Phonetics Employed by Respondents

Method	Hebrew compound	Translation	Sem. distance	Explanation
Puns	*dgigim – tsehok*	small fish - laughter	3.8	*digdegu* [tickled] was used to represent laughter, creating *hadgigim digdegu* , thus eliciting meaning despite the lack of semantic connection.
Phonetic similarity	gdudim – ga'aguim	battalions – longing	3.2	Connecting phonetic similarity.
	ruach – rehem	spirit – womb	3.9	Connecting phonetic similarity

5.5 Lexicon

Responders created new metaphors and used homonyms and synonyms to extract meaning from distant compounds.

Table 5. Lexical Strategies Employed by Respondents

Method	Hebrew compound	Translation	Sem. distance	Explanation
Creating a new metaphor	*holot – tfila*	Sands – prayer	3.9	Sinking in sand resembles being immersed in prayer

| Homonymy | *holot – tfila* | Sand (sing. *hol*) – opp. of holy, as in prayer | 3.9 | The homonymous *hol* connected with *tfila* to produce "weekday prayer". |
| Synonym + homonymous back formation | *tachshitim – kets* | Jewelry - end | 3.9 | Synonym: *tachshit* (sing.) = *adi*. Truncated, *adi* became *ad* = forever. Resulting compound: *ad ein kets* [to no end; forever and ever] |

6. Discussion

The present study investigates the concept of semantic distance in Hebrew poetic metaphors and how Hebrew speakers overcome this distance to elicit meaning. In contrast to the neurolinguistic approach that proposes understanding metaphors via the different functions of the brain hemispheres, the preliminary empirical study proposed here adopts a cognitive-phenomenological-empirical approach. Its underlying premise is that speakers are conscious, even if partially, of their verbal choices. They distinguish mentally between familiar and common compounds and innovative ones that may potentially carry meaning, if not an obvious one, such as *dgigei tsehok* [small fish laughter] or *gdudei ga'aguim* [battalions of longing] coined by poet Yehuda Amichai. The speakers were even able to explain how they attached meaning to those word pairs.

The research participants received pairs such as *dgalim–ahava* [flags– love] and *tachshitim–kets* [jewelry–end] without any syntactic link or context. They had to rate the distance between the words and explain the meaning of the word pairs. The distance score range was much broader in the investigated word pairs than in the control word pair group. The questionnaires' analysis offered a glimpse into the diverse ways in which the respondents reconciled distant nouns.

Some participants attached meaning to semantically distant word pairs by syntactic and morphological methods. They added the word *yesh* [have] to connect *yetomim* [orphans] and *tikvot* [hopes], creating phrases such as "orphans have hopes" or "orphans have abandoned [all] hopes". This indicates that to derive meaning, the speakers seek to create complete sentences using "have" or "have not" as predicates, while the two distant nouns are the subjects and objects, respectively. This way, they create a relationship of belonging/not belonging between nouns where another connection is difficult to find.

To produce intelligible phrases from dgalim–ahava [flags–love], some respondents used the preposition "for", yielding "love for the homeland" and "love for the homeland and the flags that symbolize it". As prepositions create relationships between nouns, forming prepositional phrases can bring semantically

67

distant nouns closer. However, this does not apply to every two nouns, and sometimes, an extent of semantic connection is necessary to elicit reasonable meaning.

The respondents also used rationalization to connect between paired components. To link *galgalim* [wheels] with *zman* [time], some suggested, for example, that both stand for "continuous movement", referring to the abstract movement of time and the physical movement of wheels. As Sovran (2006, 1993) argued, ascending the stairs of abstraction creates reconciliation, i.e., meaning. Some respondents proposed a functional relation between wheels and time, stating that "clocks have gears that function by a rotary motion" and "clocks work using wheels". In this case, they applied their knowledge that clocks, representing time, have gears.

In some cases, the respondents used bridging concepts to connect the word pairs. For example, referring to the verse from the Songs of Songs (2: 4) *vediglo alay Ahava* ["…and his banner over me is love"] they connected *dgalim* [flags] and *ahava* [love].

Another means used was a phonetic association. Thus, some respondents linked the noun *dgigim* [small fish] and *tsehok* [laughter] with the close-sounding noun *digdug* (tickle), and came up with a sentence such as *hadag digdeg oti vegaram li litshok* [The fish tickled me and made me laugh]. Some respondents connected *ruah* (spirit) with *rehem* (womb) leaning on the similarity of two shared consonants. The responders, finding no semantic affinity, were satisfied to find any connection, even if just a phonetic one.

Some respondents used lexical ways to produce meaning. For example, looking to connect *tachshitim* [jewelry] and *k*ets [end], they replaced jewelry with its synonym, *adi.*, from which they derived the word *ad* [until, forever], producing the familiar phrase *ad ein kets* [to no end; forever and ever].

The philosopher of language, Marcello Daskal, coined the phrase "Man is a hunter of meaning" (personal communication). Indeed, the respondents made persistent efforts to "hunt" for coherent meanings, no matter how broad the semantic gap between the paired nouns.

An indicative conclusion emerging from the study relates to the status of nouns in the lexicon. Sovran (1994) and Fillmore (1994) highlighted the "loneliness" of nouns, whose connections to other nouns are not self-explanatory and require effort. Verbs, in contrast, are rich in information about the action they represent, such as, whether it is a past, present, or future action, who performed it, who is its object, whether it is ongoing or momentary, and more. This explains why one of the most common ways of connecting distant nouns was by deriving verbs from one of them.

The study's findings could assist in understanding language processes while also shedding light on mental lexical structures. Future research could expand the corpus to include other poets' work and may reveal additional options of spanning semantic distances. Another challenge worth researching is an in-context study of the poetic language, i.e., how poets who use surprising combinations integrate them into their poems in a way that touches or even excites the readers. The study could be expanded to other languages to explore how speakers of other languages elicit meaning from distant pairs of word.

7. Summary and Conclusions

In the present study, respondents received semantically distant noun pairs drawn from Yehuda Amichai's poetry without syntactic indication or context. The findings reveal that they made considerable efforts to elicit meaning from the word pairs, even if the semantic gap between them was broad. In some cases, they made unusual connections, even illegitimate ones, such as replacing one of the words with another more feasible one, proving their strong drive to find a semantic affinity even when the combination seems almost meaningless.

Acknowledgement

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Appendixes

Appendix 1. List of analyzed noun pairs

Hebrew compound	Translation	Semantic distance
prahim – ahava	flowers – love	1.9
galgalim – zman	wheels – time	2.0
yetomim – tikvot	orphans – hopes	2.4
anashim – zeevim	people – wolves	2.6
anashim – marpekim	people – elbows	2.6
matseva – ohavim	headstone – lovers	2.6
Shikior – hayim	drunk – life	2.8
dgalim – ahava	flags – love	2.8

Hebrew compound	Translation	Semantic distance
eynaim – yahalom	eyes – diamonds	2.8
guma – guf	dimple/dent – body	2.8
karish – ka'as	shark – anger	2.9
nitsolim – halomot	survivors – dreams	2.9
orkim – mapot	arteries - mapot	3.0
gdudim – ga'aguim	battalions – longing	3.2
etsim – meshorerim	trees – poets	3.2
soragim – tsla'ot	bars – ribs	3.5
kvishim – pere	roads – savage	3.6
mapa – hayim	map – life	3.6
haruzim - sakana	beads - danger	3.7
kir – ne'umim	wall – speeches	3.8
dgigim – tsehok	small fish – laughter	3.8
goral – pasim	fate – stripes	3.9
holot – tfila	Sands – prayer	3.9

Hebrew compound	Translation	Semantic distance
tachshitim – kets	jewelry – *end*	3.9
ruach – rehem	spirit – womb	3.9
tsfarde'im – tsipiya	frogs – expectation	4.2
nesoret – she'elot	Sawdust – questions	4.3

Appendix 2. List of two-word control collocations

The collocation	Translation	Semantic distance
nivhar – tsibur	elected official	1.5
pat – lehem	slice of bread	2.0
ysoshev – rosh	chairman	1.6
derech – melech	main road	1.6
sulam – havalim	rope ladder	1.8
shomer – rosh	bodyguard	1.8
tsiunei – derech	milestone	1.9
lev – yam	the high seas	2.0
peles – mayim	water level	2.2

miktso'a – hofesh	free profession	2.8	

Appendix 3. Compounds Analyzed and Their Sources (ordered by semantic distance)

The compound	The poem	The book	Semantic distance
pirhey ahava	*shney shirim al hakravot harishonim*	*shirim 1948-1962*, page 23	1.9
Love flowers	Two songs about the first battles	Poems 1948-1962	
galgaley zman	*Hamelech Sha'ul ve'ani*	*shirim 1948-1962*, page 149	2.0
Time wheels	King Saul and I	Poems 1948-1962	
yetomey tikvot	*ze achshav kach*	*gam ha'egrof haya pa'am yad ptucha ve'etsba'ot. Patuach sagur patuach*, page 115	2.4
Hope orphans	This is how it is now	Even a fist was once an open palm with fingers. Open closed open	
anshey ze'evim	*ahavnu kan*	*shirim 1948-1962,* page 71	2.6
Wolve people	We loved here	Poems 1948-1962	
anshey ha'marpekim	*ahavnu kan*	*shirim 1948-1962,* page 71	2.6
Elbow people	We loved here	Poems 1948-1962	

The compound	The poem	The book	Semantic distance
matseva shel ohavim	*ledaber al shinuyim haya ledaber al ahava*	*shirey ahava,* page 80	2.6
A lovers' gravestone	Speaking about change meant speaking about love	Love Poems	
shikor hayim	*Ruth haktana*	*gam ha'egrof haya pa'am yad ptucha ve'etsba'ot. Patuach sagur patuach,* page 69	2.8
Drunk on Life	Little Ruth	Even a fist was once an open palm with fingers. Open closed open	
digley ahava	*lo rahok mehamavet*	*gam ha'egrof haya pa'am yad ptucha ve'etsba'ot,* page 46	2.8
Love flags	Not far from death	Even a fist was once an open palm with fingers. Open closed open	
einey yahalom	*matnot ahava*	*shirey ahava,* page 102	2.8
Diamond eyes	Love gifts	Love poems	
gumat gufenu	*kefi gumat gufenu*	*shirey ahava,* page 34	2.8
Dent of our body	As is the dent of our body	Love poems	

The compound	The poem	The book	Semantic distance
krishey ka'asa	*bikur malkat Shva*	*shirim 1948-1962*, page 167	2.9
The sharks of her anger	Visit of the Queen of Sheba	Poems 1948-1962	
nitsoley halomot	*ze achshav kach*	*gam ha'egrof haya pa'am yad ptucha ve'etsba'ot. Patuach sagur patuach*, page 115.	2.9
Dream survivors	This is how it is now	Even a fist was once an open palm with fingers. Open closed open	
mapot orkay	*bemerhak shtei tikvot*	*shirim 1948-1962*, page 176	3.0
Maps of my arteries	Two hopes away	Poems 1948-1962	
gdudey ga'aguim	*tsava shel ahava*	*gam ha'egrof haya pa'am yad ptucha ve'etsba'ot. Patuach sagur patuach*, page 39	3.2
Longing legions	Army of love	Even a fist was once an open palm with fingers. Open closed open	
atsey meshorerim	*ahavnu kan*	*shirim 1948-1962*, page 72.	3.2
Poets' trees	We loved here	Poems 1948-1962	
sorgey tsla'ot	*Mimas'ot Binyamin mitudela*	*shirey ahava*, page 22	3.5

The compound	The poem	The book	Semantic distance
Rib bars	From the travels of Benjamin of Tudela	Love Poems.	
kvishey pere	*ahavnu kan*	*shirim 1948-1962,* page 65	3.6
Wild roads	We loved here	Poems 1948-1962	
mapat hayay	*na'ara sheshma Sara*	*shirim 1948-1962,* page 158	3.6
Map of my life	A girl named Sara	Poems 1948-1962	
haruzey sakana	*hikiti lena'arati velo hayu tseadeha*	*shirim 1948-1962,* page 22	3.7
Danger beads	I waited for my girl, and her steps were not there	Poems 1948-1962	
kir hane'umim	*ahavnu kan*	*shirim 1948-1962,* page 73	3.8
The speech wall	We loved here	Poems 1948-1962	
Dgigey tsehoka	*bikur malkat Shva*	*shirim 1948-1962*, page 167	3.8
The small fish of	Visit of the Queen	Poems 1948-1962	

The compound	The poem	The book	Semantic distance
her laughter	of Sheba		
goral pasim	*bezavit yeshara, mahzor meruba'im*	*shirim 1948-1962*, page 178	3.9
Striped fate	At a right angle, a cycle of squares	Poems 1948-1962	
holot tfila	*bezavit yeshara, mahzor meruba'im*	*Shirim 1948-1962*, page 174	3.9
Prayer sands	At a right angle, a cycle of squares	Poems 1948-1962	
tachsitey kets	*hikity lena'araty velo hayu tse'adeha*	*Shirim 1948-1962*, page 22	3.9
End jewelry	I waited for my girl, and her steps were not there	Poems 1948-1962	
ruach harehem	*shirim le'isha*	*Shirim 1948-1962,* page 140	3.9
Spirit of the womb	Poems for a woman	Poems 1948-1962	

The compound	The poem	The book	Semantic distance
tsfarde'ey tsipiya	*bezavit yeshara, mahzor meruba'im*	*shirim 1948-1962,* page 180	4.2
Frogs of expectation	At a right angle, a cycle of squares	Poems 1948-1062	
nesoret she'elot	*ha'ulam ha'rek*	*shirim 1948-1962,* page 172	4.3
Question sawdust	The empty hall	Poems 1948-1962	