

**Grammatical Blending:
Creative and Schematic Aspects
in Sentence Processing and Translation**

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requirements for the degree Doctor of Philosophy
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by

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TABLE OF CONTENTS

Signature Page.....	iii
Table of Contents.....	iv
List of Figures and Tables.....	vii
Notes on Hebrew Transcription.....	ix
Acknowledgments.....	x
Vita, Publications, and Fields of Study.....	xi
Abstract.....	xiii
PART ONE: GRAMMATICAL BLENDING - BASIC CONCEPTS.....	1
1. Preliminaries.....	2
1.0 Introduction and outline.....	2
1.1 The data.....	8
1.2 Theoretical background.....	9
2. The descriptive framework.....	23
2.0 Introduction.....	23
2.1 The processing of syntactic constructions.....	23
2.2 Blending operations in the generation of simple transitive sentences.....	26
2.3 Blending operations in the generation of English Caused-Motion sentences.....	31
2.4 "De-integration" operations in language interpretation.....	40
PART TWO: A GRAMMATICAL BLENDING ACCOUNT OF HEBREW <i>BINYANIM</i>	44
3. The Hebrew <i>binyanim</i> system.....	45
3.0 Introduction: From English Constructions to Hebrew Morphology.....	45
3.1 The Hebrew System of Verbal-Patterns: Some Basic Notions.....	47
3.2 Literature Review: principal accounts of the <i>binyanim</i> system.....	51
3.4 Literature review: grammatical voice and related categories.....	54
3.5 Summary.....	62

4. Blending analysis of the Hebrew causative stem <i>hif'il</i>	63
4.0 Introduction.....	63
4.1 The interaction of <i>hif'il</i> morphology and causative syntactic constructions...	66
4.1.1 <i>Hif'il</i> morphology and the Basic Transitive construction.....	68
4.1.2 <i>Hif'il</i> morphology and the Transfer construction.....	74
4.1.3 <i>Hif'il</i> morphology and the Bitransitive construction.	79
4.2 Advantages of the blending analysis of <i>hif'il</i>	84
4.2.1 Cole's clause-union account of <i>hif'il</i>	85
4.2.2 The solutions provided by the blending analysis	87
4.3 Innovative <i>hif'il</i> verbs in (non-standard) Hebrew.....	94
4.4 Conclusions.....	99
5. Blending analysis of the Hebrew transitive <i>binyanim</i>	102
5.0 Introduction.....	102
5.1 Blending characterization of the <i>pi'el</i> stem.	104
5.1.1 <i>Pi'el</i> vs. <i>hif'il</i> morphology and the Transitive Construction	107
5.1.2 <i>Pi'el</i> vs. <i>hif'il</i> morphology and the Transfer Construction	111
5.1.3 <i>Pi'el</i> vs. <i>hif'il</i> morphology and the Bitransitive Construction.....	114
5.1.4 Summary - the blending schema of <i>pi'el</i>	116
5.2 Blending characterization of the <i>pa'al</i> stem.	118
5.3 Conclusions - The transitive <i>binyanim</i> in Hebrew	124
6. Blending analysis of the Hebrew intransitive <i>binyanim</i>	126
6.0 Introduction.....	126
6.1 The "intransitive-only" <i>binyanim</i>	128
6.2 Blending analysis of <i>huf'al</i> and <i>pu'al</i>	132
6.3 Blending analysis of <i>nif'al</i>	139
6.4 Blending analysis of <i>hitpa'el</i>	148
7. Summary of results - a blending account of the <i>binyanim</i> system.....	163

PART THREE: GRAMMATICAL BLENDING IN WIDER CONTEXT	175
8. Blending and translation.....	176
8.0 Introduction.....	176
8.1 Issues in translation theory.....	178
8.2 The translation process from the grammatical blending point of view.....	188
8.3 Analyzing translation of Caused-Motion sentences into Hebrew.....	195
8.3.1 "Mismatches" in the translation of Caused-Motion sentences.....	195
8.3.2 Communicating Caused-Motion events in English.....	197
8.3.3 Communicating Caused-Motion events in Hebrew.....	199
8.4 The core analysis.....	202
8.5 Conclusions.....	230
9. Blending and NLP	232
9.0 Introduction.....	232
9.1 The field of Machine Translation (MT) - background	238
9.2 Implications of grammatical blending for semantic analysis in MT	254
9.3 Conclusions.....	276
10. Concluding Remarks.....	281
10.1 Overview - grammatical blending in sentence processing	281
10.2 Suggestions for Future Research	287
10.2.1 Theoretical Linguistics.....	287
10.2.2 Psycholinguistics.....	287
10.2.3 Language Acquisition.....	289
10.2.4 Extending the mechanism of grammatical blending.....	291
10.2.5 Linguistic blending operations and general cognition.....	293
Appendices.....	295
References.....	298

LIST OF FIGURES AND TABLES

FIGURES

Figure 1-1: Conceptual Blending (Fauconnier & Turner, 1994)	16
Figure 2-1: Blending operation in generating 'Seana kissed Danny'	27
Figure 2-2: Blending operation in generating 'Rachel sneezed the napkin off...'	33
Figure 2-3: Blending operation in generating 'She trotted the horse into...'	36
Figure 2-4: Blending operation in generating 'The commander let the tank into...'	37
Figure 2-5: Blending operation in generating 'Jack threw the ball into the basket'	39
Figure 2-6: The "de-integration" operation in interpreting 'Rachel sneezed...'	41
Figure 4-1: The mapping schema of predicates in <i>hif'il</i> sentences	65
Figure 4-2: Blending operation in generating a Basic Transitive <i>hif'il</i> sentence	70
Figure 4-3: Blending operation in generating a Transfer <i>hif'il</i> sentence	77
Figure 4-4: Blending operation in generating a Bitransitive <i>hif'il</i> sentences	83
Figure 5-1: Mapping schemas of predicates in <i>hif'il</i> , <i>pi'el</i> , and <i>pa'al</i>	104
Figure 5-2: Contrasting the mapping schemas of predicates in <i>pi'el</i> and <i>hif'il</i>	106
Figure 5-3: Blending operations in generating <i>hif'il</i> and <i>pi'el</i> Transitive sentences	109
Figure 5-4: Blending operations in generating <i>hif'il</i> and <i>pi'el</i> Transfer sentences	113
Figure 5-5: Blending operation in generating a Bitransitive <i>pi'el</i> sentence	115
Figure 5-6: Integration of predicates in <i>pa'al</i> verbs	119
Figure 5-7: Two possible blending characterizations of <i>pa'al</i> sentences	120
Figure 6-1: Comparing the blending schemas of transitive and intransitive stems	132
Figure 6-2: The blending schemas of <i>pi'el</i> , <i>pu'al</i> , <i>hif'il</i> , and <i>huf'al</i>	133
Figure 6-3: Comparing blending operations in generating <i>hif'il</i> and <i>huf'al</i> sentences	136
Figure 6-4: Comparing blending operations in generating <i>pi'el</i> and <i>pu'al</i> sentences	138
Figure 6-5: Two alternative blending characterizations for <i>pa'al</i> and <i>nif'al</i> .	140
Figure 6-6: Comparing blending operations in generating <i>pa'al</i> and <i>nif'al</i> sentences	142
Figure 6-7: The blending schema of <i>hitpa'el</i>	149
Figure 6-8: Comparing blending operations in generating <i>pi'el</i> and <i>hitpa'el</i> sentences	152
Figure 6-9: Comparing the blending schemas of <i>pa'al</i> and <i>hitpa'el</i>	153
Figure 6-10: Two possible blending schemas for the stem <i>hitpa'el</i>	161
Figure 7-1: Summary - a blending analysis of the <i>binyanim</i> system	164
Figure 7-2: Summary - three mapping schemas of predicates in the <i>binyanim</i> system	166
Figure 7-3: Summary - three mapping schemas of participants in the <i>binyanim</i> system	166

Figure 8-2: Translation is the outcome of two independent blending operations	192
Figure 8-3-A: Blending operation in generating 'The audience laughed...'	205
Figure 8-3-B: Blending operations in the translation of 'The audience laughed...'	210
Figure 8-4-A: Blending operation in generating 'She trotted the horse into...'	211
Figure 8-4-B: Blending operations in the translation of 'She trotted the horse into...'	214
Figure 8-5: Blending operations in the translation of 'She threw the ball into ..'	216
Figure 8-6-A: Blending operation in generating an Hebrew analytic causative sentence	219
Figure 8-6-B: Blending operations in the translation of 'Rachel helped Sam into...'	222
Figure 8-7: Blending operations in the translation of 'David hammered the nail into...'	224
Figure 8-8: Blending operations in the translation of 'We laughed our conversation...'	230
Figure 9-1: A frame-type representation of the predicate LAUGH-CM	263
Figure 9-2: A frame-type representation of CAUSED-MOTION events	264
Figure 9-3: A frame-type representation of 'Frank sneezed the napkin off..'	266
Figure 9-4: A frame-type representation of INSULT-THAT-CAUSES-MOTION events	269
Figure 10-1: The <i>pu'al</i> and <i>hitpa'el</i> blending schemas	291

TABLES

Table 3-1: The grammatical functions of the main <i>binyanim</i> (Berman, 1975)	53
Table 7-1: Summary - defining each <i>binyan</i> as a function of two parameters	167
Table 7-2. Waltke & O'Connor's (1990) analysis of the <i>binyanim</i> system	169

NOTES ON HEBREW TRANSCRIPTION

The transcription defined below is used for all Hebrew forms cited in the manuscript. The transcription reflects general casual Israeli Hebrew, and is a compromise (for convenience purposes) between phonemic and phonetic transcription. It combines transcription conventions from several English manuscripts on Modern Hebrew grammar (e.g., Berman, 1978; Glinert, 1989).

Consonants		Vowels	
<u>Letter Name</u>	<u>Transcription</u>	<u>Name</u>	<u>Transcription</u>
<i>alef</i> ?		<i>kamac/patax</i> a	
<i>bet / vet</i>	b / v	<i>segol / cere</i>	e
<i>gimel</i>	g	<i>xirik (yod)</i>	i, e
<i>daled</i>	d	<i>xolam (vav)</i>	o
<i>he</i>	h	<i>shuruk / kubbutz</i>	u
<i>vav</i> v			
<i>zayin</i>	z		
<i>xet</i> x			
<i>tet</i>	t		
<i>yod</i>	y		
<i>kaf / xaf</i>	k / x		
<i>lamed</i>	l		
<i>mem</i>	m		
<i>nun</i>	n		
<i>samex</i>	s		
<i>ayin</i>	'		
<i>pe / fe</i>	p / f		
<i>cade</i>	c		
<i>kof</i> k			
<i>resh</i>	r		
<i>shin / sin</i>	sh / s		
<i>tav</i> t			

Note on transcription of consonants: *alef* and *ayin* in initial and final positions of a word, and *he* in final position, are not indicated in the Hebrew transcription in this manuscript.

NOTATIONS

* before a linguistic example indicates 'unacceptable'

? before a linguistic example indicates 'questionable' Other symbols are explained as they occur in the text.

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ABSTRACT OF THE DISSERTATION

Grammatical Blending:
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Professor Gilles Fauconnier, Chair

This dissertation studies the intricate connection between conceptual structure, meaning, and grammar, through an analysis of a general cognitive operation (*conceptual blending*). I develop an analysis of sentence processing as a case of conceptual and linguistic blending: sentence generation involves the blending of a conceived event with a syntactic construction; sentence interpretation starts with a reconstruction of the blending configuration. An important function of grammar is to formally mark various blending configurations, providing cues to the hearer in reconstructing (interpreting) linguistic blends.

The study analyzes sentences from English and Hebrew showing that similar blending configurations underlie these two superficially different grammatical systems. I suggest that the two systems differ only in the *formal* "tools" that mark blending configurations. The analysis also suggests that the same blending operations give rise to both the highly structured aspects of language and to its creative aspects (as reflected in non-conventional, productive use of the language). These two "forms" of language lie on a continuum from entrenched to novel blends. "Grammaticality" represents the most entrenched blending configurations.

A major part of the dissertation analyzes a single grammatical system: the Hebrew verbal morphological *binyanim* system. I argue that different *binyanim* systematically mark alternating blending configurations. Traditional grammatical functions associated with the system (such as causative, passive, middle, and reflexive) reflect different blending configurations. Taken together, the *binyanim* form a unified system for marking a generic conceptual operation. In addition to identifying the connection between conceptual and morphosyntactic structure, the blending analysis also provides new insights into the system: it establishes a distinction between two causative *binyanim*, accounts for ambiguous *binyanim*, and motivates distributional facts.

The second part of the dissertation studies English-Hebrew translation examples and discusses implications for NLP (particularly Machine Translation). I show that translation involves a double blending operation (in the source and target languages). The interaction of these blending operations leads to "translation mismatches". The analysis shows that the translation of even simple, decontextualized sentences involves complex blending operations. I argue that current computational mechanisms are designed to deal only with entrenched blends, and are not yet able to process creative blending. These findings provide a way of characterizing the strengths and limitations of current NLP.