

**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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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.