

## Prosodic Typology II

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# Prosodic Typology II

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The New Development in the Phonology  
of Intonation and Phrasing

Edited by  
SUN-AH JUN

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Great Clarendon Street, Oxford, OX2 6DQ,  
United Kingdom

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First published in



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Soundfiles accompanying the figures can be found at the following site:  
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## Preface

Since the publication of *Prosodic Typology* in 2005, the Autosegmental-Metrical framework of intonational phonology has been applied to various languages. To expand the database for prosodic typology, a workshop on Intonational Phonology of Understudied or Fieldwork Languages was held in 2007, as a satellite meeting of the 16th International Congress of Phonetic Sciences in Saarbrücken, Germany. Nine languages presented at the workshop are included in the current volume. Five languages were solicited after the workshop either because the researcher could not participate in the workshop (Mongolian, Papiamentu) or because the language is relatively well-studied and thus did not meet the workshop theme (Portuguese, Catalan, Basque). The intonational phonological descriptions of two major languages which could not be included in the first volume (Spanish, French) are intentionally left out of the current volume as separate publications were already in progress to describe the intonational phonology and ToBI transcription systems of these languages: ten dialects of Spanish in Prieto and Roseano (eds. *Lincom Europa*) and French ToBI (Delais-Roussarie et al. forthcoming) in Prieto and Frota (eds.

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## The Contributors

A A A D received an M.A. from the University of Potsdam 2007 with a thesis on intonational focus marking in West Greenlandic and a Ph.D. from Goethe-University Frankfurt am Main with a dissertation on intonation and phrasing in Finnish in 2013. Her research mostly focuses on prosody, especially its interaction with infor-



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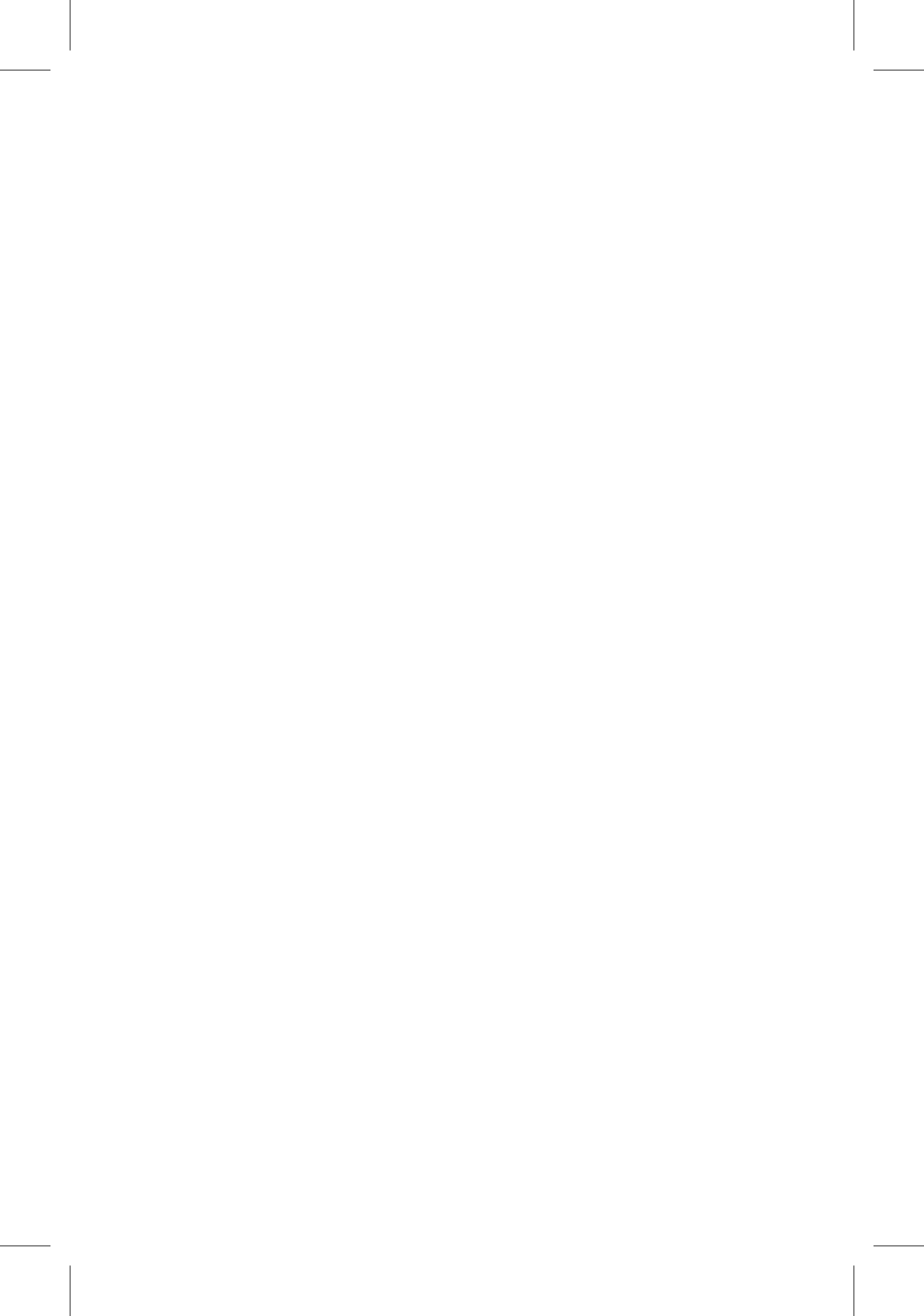
**BEN REE** has a Ph.D. from Leiden University, and is now working at the University of Edinburgh. He is a specialist on rich prosodic systems. He started out studying languages that have both distinctive lexical stress in addition to lexical tone (Ma`ya, Papiamentu). Nowadays, he focuses on Western Nilotic languages such as Dinka and Shilluk, which have a three-level length distinction in addition to independent tone and voice quality contrasts.

**RADSE** is Professor of Language Education, with a focus on Papiamentu, at the University of Curaçao. He is also the managing director of the Curaçao

## List of Abbreviations

ABL	Ablative
ACC	Accusative
AM	Autosegmental-Metrical
AP	Accentual Phrase

IP	Intonational Phrase
ip	Intermediate Phrase
JC	Jamaican Creole
J-ToBI	Japanese Tones and Break Indices System
K-ToBI	Korean Tones and Break Indices System
L	Low
LA	Lebanese Arabic
LDA	Linear Discriminant Analysis
Lek. Bq.	Lekeitio Basque
LOC	Locative
MaR_Var	Macro-rhythm Variation Index
M	Mid
MAE_ToBI	Mainstream American English Tones and Break Indices System
MaP	Major Phonological Phrase
MiP	Minor Phonological Phrase
MSA	Modern Standard Arabic
NBB	Northern Bizkaian Basque
NEP	Northern European Portuguese
NMR	Nominalizer
NOM	Nominative
NP	Noun Phrase
O	Object
OCP	Obligatory Contour Principle
PASS	Passive
PhP	Phonological phrase
POT	Potential
PRES	Present
PW	Prosodic Word/Phonological Word
Pwd	Prosodic Word
Q	Question marker
QUIS	Questionnaire on Information Structure
RC	Relative Clause
S	Subject
SD	Standard Deviation



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1988; (1996) B- (1980; & B J 1992; B J & A 1997). 4.2 B 4.3, B B B- B 4.4 4.5.

#### 4.2 Previous studies

B (1960, 1966) fi (1991) A B (1973; 1986) ( & J 2003; J 2005 ; J J 2006) & ( & J 1993). fi B (2004) B

100 - 100 100 - 100 % 100 100 100 % %  
100 100 - / 100 , % 100 100 100 100 100 ( 100 -



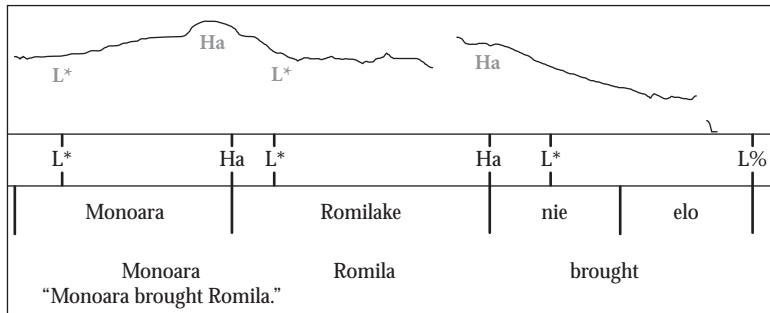


FIGURE 4.1 Pitch contour for the sentence “Monoara brought Romila.” (ACC). The plot shows frequency (L\*) and harmonicity (Ha) over time. The pitch starts at a low level (L\*), rises to a peak (Ha) over “Monoara”, falls to a lower level (L\*) over “Romilake”, rises to another peak (Ha) over “nie”, and finally falls to a low level (L%) over “elo”. Below the plot, the words “Monoara”, “Romilake”, “nie”, and “elo” are aligned with their respective pitch segments. At the bottom, the sentence “Monoara brought Romila.” is written in quotes.

... A , ... ( \* ) ... A ... ( ) . 01<sup>4</sup>

...<sup>5</sup> ... A ... ( ... \* ... ) . ( 4.4 .

... fi ... )

... A ... A ( \* ... ) , ... ( \* ) ( ... )

... A ( \* ... ) , ... 4.2. ... A ( \* ... )

... A ( \* ... ) ...<sup>6</sup> ... A ( \* ... ) ,

... A ... A ( ... ) , ... A

... ) ... downtrend, ... A -

... A - ...

... 4.1 ... 4.2. A ... , ...

A ... ( ) ... 4.3; ... A ...

( ... ) , ... 0 ... 320 , 302 , 250 , 246 , 210 , ... 166 .

A ... A

4 ... (2008), ...

... (2010).

5 ...

6 ...

... A , ... 4.3.4. 1202.226716.2.93\_51.432-154.599.46-15963

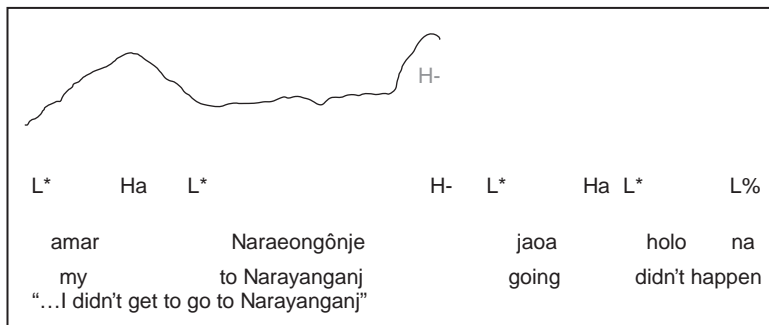
( ) A ( 1990, 1996) <  
(!) (B J & A 1997); , B  
J ( & B J 1988; 2005),  
A - A .  
B  
:

A , . . . % fi A  
A . A . %

... % ... % % fi A ... % ... % ... %  
... % ... % ... % ... % ... % ... % ... %  
... % ... % ... % ... % ... % ... % ... %  
... % ... % ... % ... % ... % ... % ... %



... -f<sub>1</sub> ...  
... (-) ...  
... -f<sub>1</sub> ... f<sub>1</sub> ...  
... -f<sub>1</sub> ...  
... (-) ... 4.7, ...  
... (-) ...  
... -f<sub>1</sub> ...  
... A ...



The ip boundary tone's pitch elbow is even more noticeable when the ip boundary is separated from the previous pitch accent by several syllables, as in the word [na aɔŋɡɔnd e] "to Narayanganj" (name of a city) in Fig. 4.8. Note how the pitch elbow for the high ip boundary tone (H-) occurs during the ipal syllable [ɔ], and how the preceding pitch rises only slightly across the syllables between the low pitch accent (L\*) and the pitch elbow.

The high ip boundary tone (H-) reaches a higher pitch than the high AP boundary tone (Ha), as illustrated in Fig. 4.9. By comparing the differences in pitch between the F<sub>min</sub> corresponding to the low pitch accent (L\*) and the F<sub>max</sub> corresponding to the high boundary tone (Ha or H-) of identical words when APal and ip- nal (measured within speaker's  $\pm 10\%$ ), it was found that the pitch of the high ip boundary tone (H-) is higher than that of the high AP boundary tone (Ha) [paired t (1090),  $p < 0.05$ ]. Depending on the speaker, the word measured was either the subject [a]onoa "Monoard" produced sentence-initially, or one of two proper name objects [a]milake "Romilaacc" or [ninake] "Nina-acc"—produced sentence-medially.

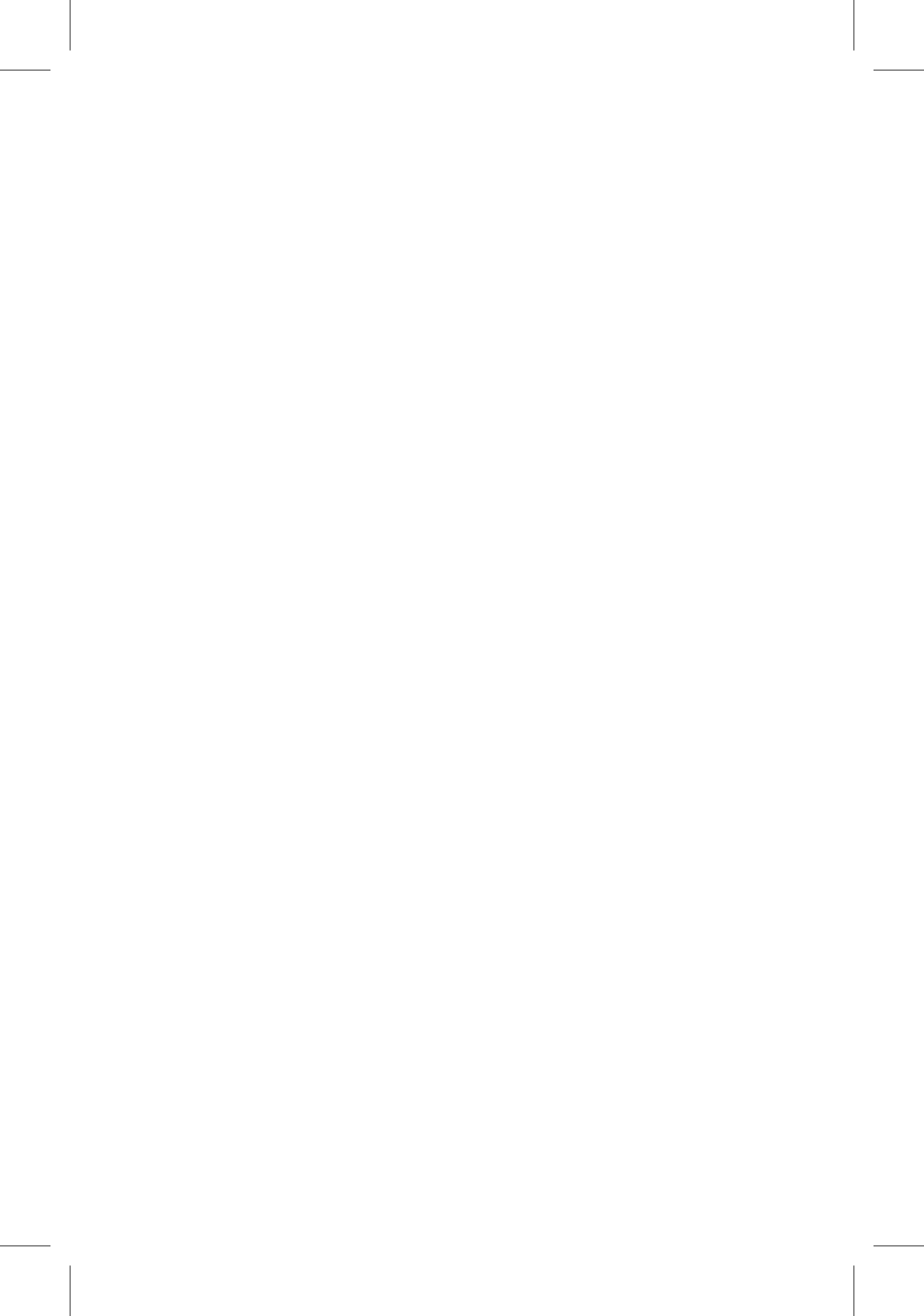
Because of the very local realization of the high ip boundary tone (H-), one may think that it should be analyzed as a rising tone. However, Bengali in fact has another tone described as a rising ip boundary tone (LH-). This tone occurs at the right edge of long phrases, typically denoting background or known information, and is realized as both a fall and a rise in pitch during the ipal syllable. The sentence in Fig. 4.10 includes rising ip boundary tones (LH-) at the edges of the phrases [dɔ] bɔdɔ "today in the early afternoon" and [d um:a namɔ e unlam] "I heard at Friday prayers".

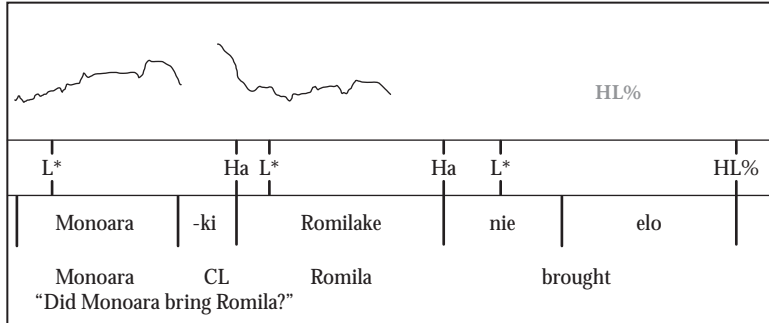


100 ( -)  
100 (%)  
100 (-)  
100 -



... ) ... ( %  
... 4.14.  
... ( %);  
...  
-fi









2 1R 1R ( %), 2 . 2 2 1R . 2 6









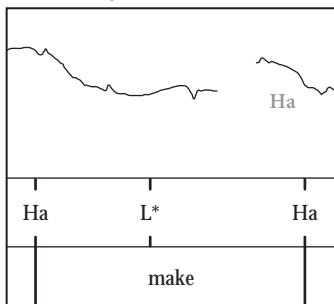




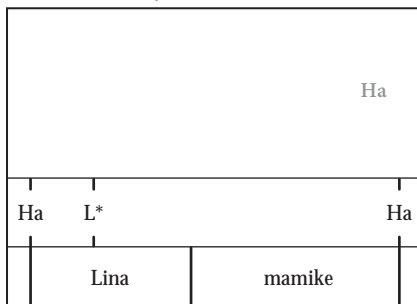




2 syllables, no focus



5 syllables, no focus



( ) ( \*+( ) ) 0  
 -fi  
 ( .431, ), ( .431, ).  
 0 ( \*+ )  
 -fi .432.  
 0 ( \*+ )  
 fi  
 ( . . - ),  
 .B  
 A ( \*... ) ( \*+ )  
 , .433 .434.

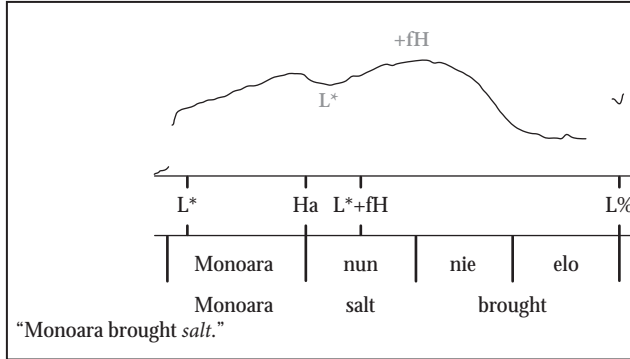


FIGURE 4.32

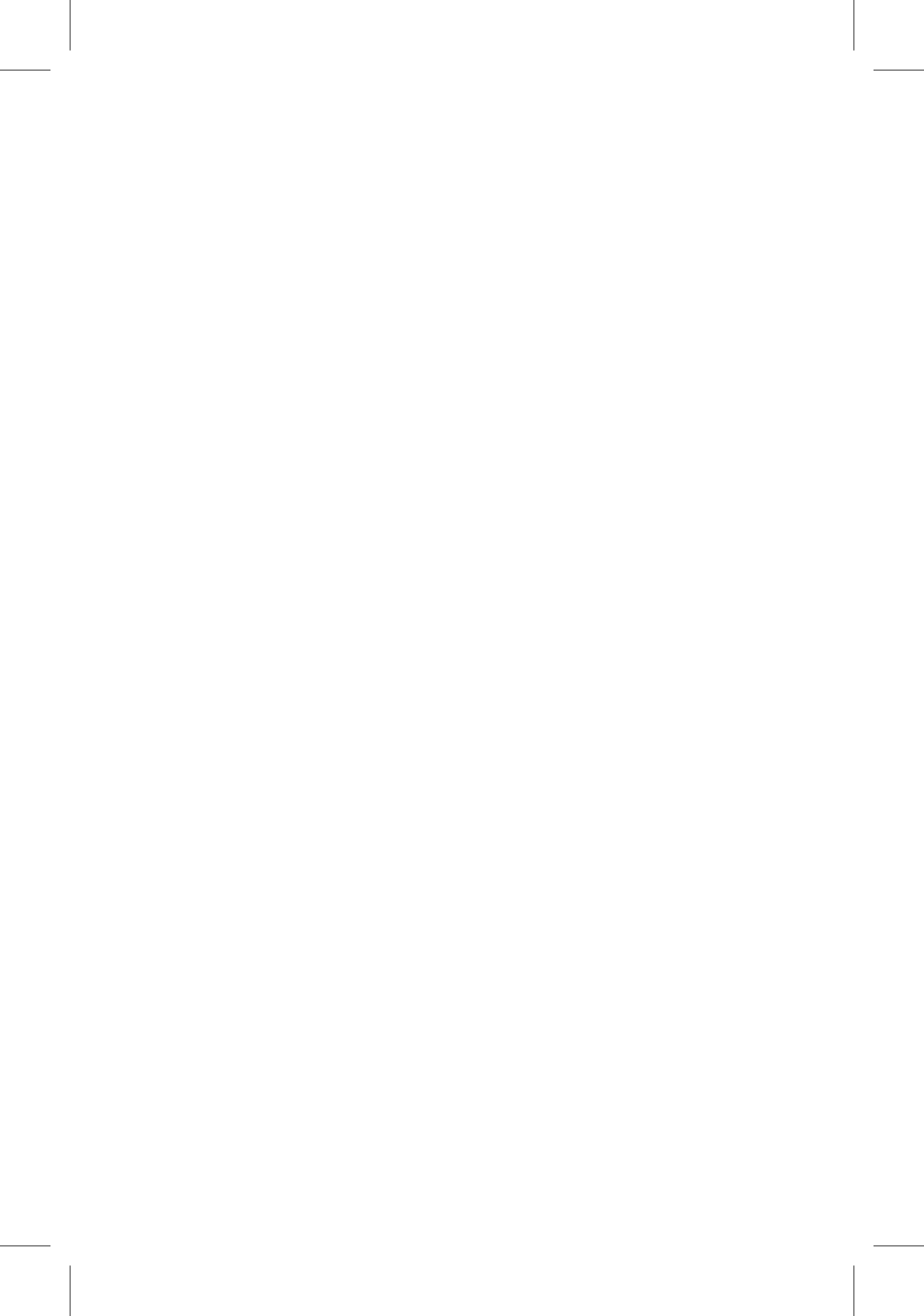
0

(f)Ha


ACC ) 0.27 0.433 0.434 fi A 0.0 0.0  
% 0.0 0.0  
10.9 12.7%), 0.0 0.0  
12.8 54.2%);  
0.435  
A ( \*... ).  
( ..% 0 , % 0. )  
0.436  
( ..% 0 , % 0. )  
0.436  
( ..% 0 , % 0. )

decreases % 0. increases.  
A ( \*... ) 0 . B





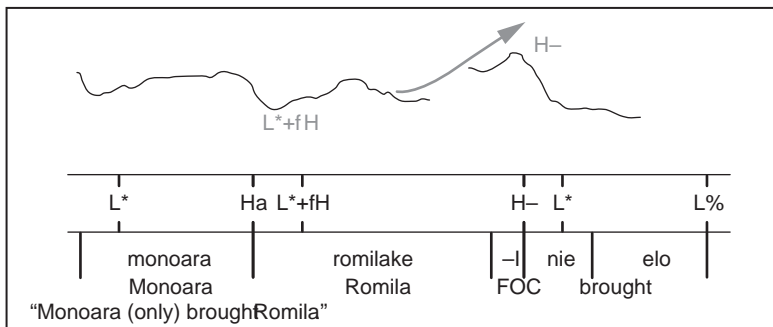


FIGURE 4.39 Although the encliticized AP [romilakej] “(only) Romila<sub>acc</sub>” is expected to bear a focused high AP boundary tone (fHa), it undergoes leftward shift and thus bears a focused rising pitch accent (L\*+fH), in order to avoid the overriding of the focus high tone (fH) by the high ip boundary tone (H-). [B&B]

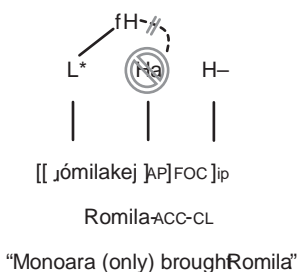


FIGURE 4.40 Schematic illustration of the leftward shifting of the focus high tone (fH) due to an adjacent high ip boundary tone (H-). The crossed dash line represents the otherwise expected

(v) Summary Focused constituents can bear one of three focus realization patterns, each of which incorporates a surface realization of the focus high tone (fH): focused rising AP (L\* . . . fHa), focused rising pitch accent (L\*+fH), and focused high pitch accent (fH\*). Words attached to focus enclitics use the high AP boundary tone (Ha) as the docking point and bear the focused rising AP tonal pattern (L\*+fH), while corrective focus and wh-answer focus are realized through the use of the focused rising pitch accent (L\*+fH), in which the low pitch accent (L\*) serves as a point of adjunction with the focus high tone (fH). Words denoting particularly surprising information bear the focused high pitch accent (fH\*), which is the result of fusion between the focus high tone (fH) and the high pitch accent (H\*) in the falling AP (H\* . . . La). All three realizations of the focus high tone (fH) can be deleted in their violation of downtrend, and in the following tone deletion or compression. Furthermore, the most common tonal realization of focused constituents is focused rising



3 ( \*+ )    1 1 3 . 3    1 1 1 1  
- 1 1 -    1 1 3    1 A ( \*... ) 3 / 3    1 1 3  
.. 1 1 0    1 3 1 1 1    3 3 3    1 1 ,







A %                    1 2    1 2 1 2 1 2    % A    1 2 1 2 / % /    1 2 1 2 -  
1 2 %                    ,                    - 1 2                    1 2 -    %  
- B 1 2    1 2 -    1 2 %    1 2 1 2 /                    %    % - %    1 2  
- B 1 2    %    1 2    B 1 2    1 2                    1 2    -    1 2  
-    1 2 %                    - %                    1 2 1 2 %

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(B... ; ... 3

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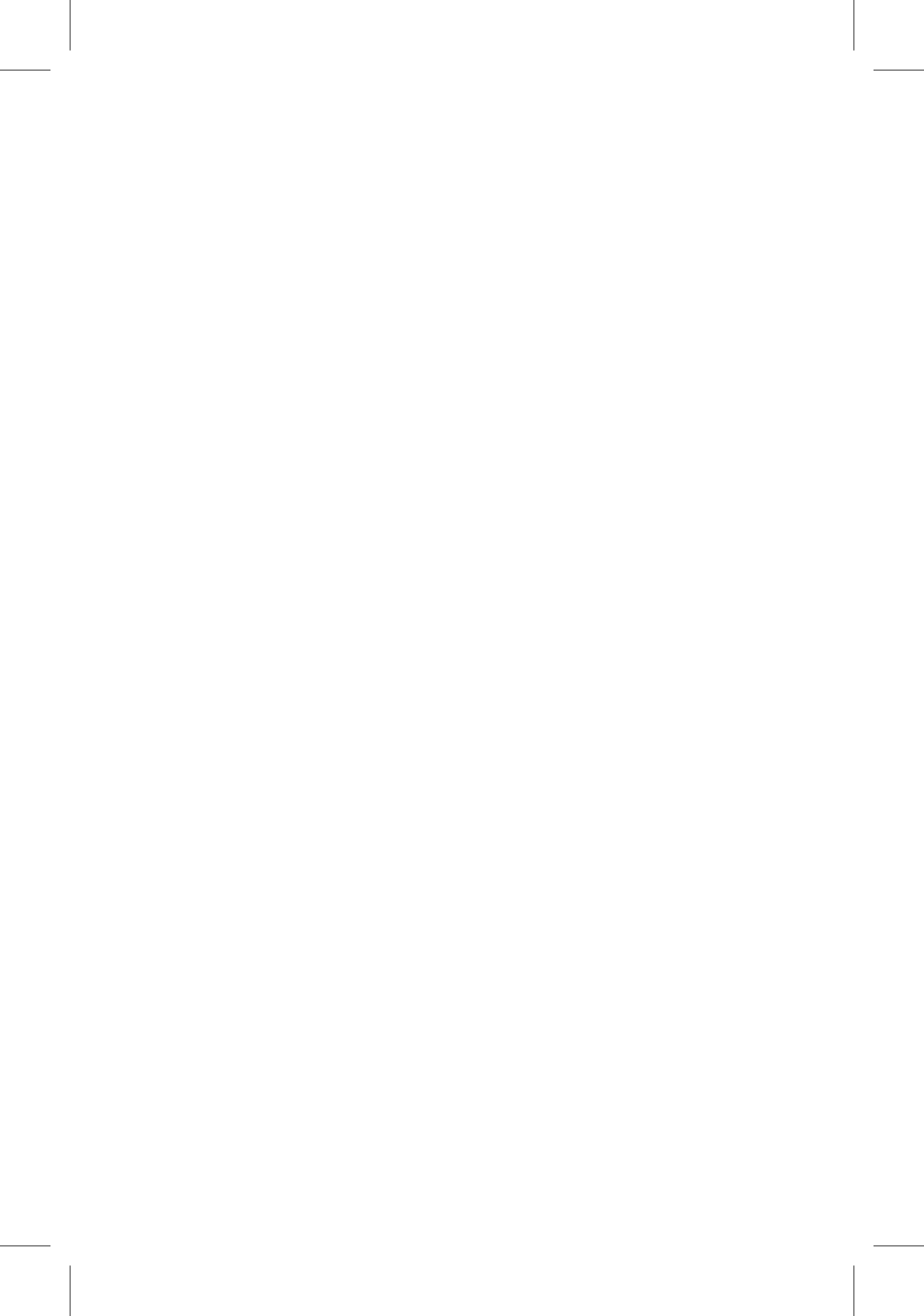


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