

Survival of the Fittest

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*Fricative Lenition in English
and Spanish from the
Perspective of Optimality
Theory*

By

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Cambridge
Scholars
Publishing



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of Optimality Theory

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This book first published 2015

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

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ISBN (10): 1-4438-7227-X

ISBN (13): 978-1-4438-7227-0

This preservation, during the battle for life, of varieties which possess any advantage in structure, constitution, or instinct, I have called Natural Selection; and Mr. Herbert Spencer has well expressed the same idea by the Survival of the Fittest.

—Charles Darwin

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LIST OF ABBREVIATIONS

BI	BASE IDENTITY
ID(PL)	IDENT(PL) constraint
I-O	input-output relation in OT
MAX	MAX(SEG) constraint
OE	Old English
O-O	output-output relation in OT
OT	Optimality Theory
OT-CC	Candidate Chains (OT subtheory)
PL	place features
PrGmc	Proto-Germanic
PW	prosodic word
SEG	segment
SPE	<i>The sound pattern of English</i>
SSG	Sonority Sequencing Generalisation
TCT	Transderivational Correspondence
UE	UNIFORM EXPONENCE
‘ ’	glosses
[]	surface representation
//	phoneme / input in a tableau
///	underlying representation
*	reconstructed historical form / incorrect form / constraint violation
!	fatal violation in OT
σ	syllable node
☞	winning candidate
☞	undesired winning candidate
☹	desired losing candidate
>>	ranked higher than
☺	sympathetic base / constraint
★	selector in sympathy evaluations
✓	satisfaction of the selector

PREFACE

This book is a fruit of my scholarly interest in the workings of consonantal sound change and of the resultant PhD research focused especially on the Spanish sound inventory. In pursuit of regularities within, and discrepancies between the various dialectal processes, I decided to conduct my own fieldwork and thoroughly analyse both apparent and hidden drivers of the consonantal changes encountered in English and Spanish. In doing so, I took a broader perspective, seeing phonological processes as successors of phonetic innovations on the one hand, and predecessors of morphological and lexical shifts on the other. In my view, the study of any given linguistic phenomenon should go beyond basic research findings and relate the empirical data with the whole sound system of a given dialect in both synchronic and diachronic terms, and possibly also with the data provided by neighbouring (or similar) dialects. As will be demonstrated on the pages of this book, the combination of formal analytical tools with this globality, understood in terms of philosophy of language, is the key to a deeper understanding of inner linguistic mechanisms. Thus, the outcome of my graduate work, presented on these pages, is a modest attempt at encompassing more than just a formal discussion of certain phonological processes. I try to pursue the more profound question of why and how certain regularities within irregularities are attested across the world's languages, especially given the fact that they occur in a curiously cyclic fashion. The debate initiated herein is by no means exhaustive and needs to be supplemented by the latest insight phonology, sociolinguistics, neurolinguistics and psycholinguistics have provided into the study of the language faculty and other cognitive functions. Certainly, more data is necessary to support the hypotheses entertained here, and other formal approaches developed since the initial wording of the book should be investigated, but I hope that the following chapters serve as a small contribution to linguistic analysis, with a special emphasis on phonology.

The contents of this work provide an in-depth analysis of weakening processes attested in Spanish and English within the framework of Optimality Theory (Prince and Smolensky 1993). The book examines fricative lenition as an instance of sound change in progress, contributing to the study of phonological change and the notion of strength in

phonology. It also provides motivation for the introduction of a derivational stage in OT analysis, further legitimising Stratal Optimality Theory (Rubach 1997, 2000; Kiparsky 1999). Based on the weakening processes affecting Spanish *s* and English *x*, a critical analysis of various OT sub-theories, such as sympathy theory (McCarthy 1999), output-to-output correspondence (Benua 1995, 1997; Kenstowicz 1996) and positional faithfulness (Casali 1996, Beckman 1997, among others), is provided, leading to interesting conclusions concerning the way in which lenition and opacity processes should be addressed in OT. Following a thorough examination of the nature and understanding of weakening processes and their place in the history of language, a comprehensive account of positional as well as inherent sound weakening is presented with reference to the Spanish and English fricatives.

Under the assumption that linguistic change should be conceived in evolutionary terms, it is concluded that sounds undergo continuous modification which is not at all accidental. The direction of linguistic change tends to be a constant on the temporal and, very often, also on the spatial axis. The leniting character of a large portion of phonological processes observed in the world's languages points to the universal tendency for sounds to gradually fade and give way to other, stronger segments, which may be interpreted as an instantiation of 'natural selection' within language. Thus a parallel may be drawn between lenition and Spencer's 'survival of the fittest'. This is supported by historical facts presented with reference to both Spanish and English in which diachronic changes have led to an important reorganisation of phonological material at the underlying level. Changes in the speakers' competence have either already taken place or will be inevitable in the immediate future. As illustrated by the Spanish and English data, such changes may lead to important shifts in the grammar. At the same time, it is demonstrated that the analysis of sound change, which implies recourse to historical and sociolinguistic methodology, is not at odds with formal linguistic tools provided by theoretical phonology. On the contrary, all of these approaches to linguistic analysis converge and complement each other, allowing for an exhaustive and integrated discussion of lenition.

Chapter One provides a brief introduction to the Spanish sound system. Due to the fact that the vast majority of processes discussed in the book concern non-standard Spanish varieties, especially Chilean, the Chilean phonemic inventory is presented to provide background for the subsequent analyses. Comments on the discrepancies between the Chilean variety and other dialects are provided where necessary.

Chapter Two provides a comprehensive analysis of the concept of lenition as well as processes encompassed by the term, together with a detailed discussion of linguistic change. Various approaches to the subject of sound change in language are considered and an attempt is made at providing a holistic view of lenition in terms of sound change and its implications for the linguistic competence of speakers, as well as for the makeup of the phonemic inventory and grammatical structures.

Chapter Three outlines the process of opaque *s*-aspiration in Spanish in interaction with resyllabification. It is debated whether standard OT and auxiliary OT tools are able to account for opacity in the Spanish language caused by discrepancies in output structures in phrase-level phonology. Both positional markedness and positional faithfulness are discussed, the conclusion being that neither of the two approaches is able to address the Spanish opacity problem. In view of the difficulties encountered by standard OT, output-output correspondence and sympathy are evoked to solve the issue, yet the analysis is inconclusive. It is demonstrated that the solutions provided by auxiliary OT mechanisms are unsatisfactory.

Chapter Four presents the process of Spanish *s* weakening from a broader perspective, providing data from Chilean which confirm the leniting nature of the discussed process. It is argued that *s* weakening is a well advanced process in the dialect under discussion due to the fact that the underlying segment is dropped completely in certain contexts. Thus, two different processes govern the lenition of *s* in weak positions in line with the lenition trajectories and general sound change tendencies discussed in Chapter Two. A comprehensive analysis of the interplay of the two processes with resyllabification follows, the conclusion being that only Stratal OT is able to account for both aspiration and segment loss in the language. It is argued that the Stratal OT mechanism grasps the important insight that word and phrase phonology are not equivalent and should receive different treatment in phonological analysis.

Chapter Five addresses the question of English velar fricative lenition, which requires a closer look at the history of the English language. The evolution of the velar fricative on its way from Proto-Germanic, through the Old English period to modern English is examined, with an in-depth synchronic analysis of the distribution of *x* and *h* in Old English, followed by an attempt at providing an analysis of the uneven distribution of *h* and *ç* in present-day English. It is argued that phonemic restructuring took place in Old English, while a remnant of the velar fricative is still present underlyingly in the language nowadays, which is supported by phonological processes and distributional evidence. Gradual ousting of the velar fricative from the system, both from the unprivileged coda position

and from the onset, points to the fact that a broader phonological process in the form of lenition is responsible for the observed shifts.

Chapter Six summarises the discussion, providing conclusions.

Given the fact that the analyses provided in this book were formulated in the years 2010-2011 and the final version of the PhD dissertation on which this book is based was submitted in 2012, the text does not discuss certain approaches within Optimality Theory that would now spontaneously come to mind when investigating the provided data. What is more, the analysis of all the existing approaches is not the focal point of this work and thus, naturally, certain subtheories have been omitted. Some of the approaches, however, have not stood the test of time (e.g. sympathy and revised sympathy) while others thrived. One such subtheory was still evolving into what is now well-grounded under the name of Harmonic Serialism (McCarthy 2008 and 2010). Unfortunately, this framework raises a series of questions and uncertainties concerning its formal application to the Spanish data analysed in this book. It is also unable to account for the discussed processes, which is probably due to the fact that it has not been designed to address opacity and cannot successfully solve its counter-feeding and counter-bleeding types (in the words of McCarthy himself already in 2000). Another mechanism worth mentioning at this point is OT-CC (McCarthy 2006 and 2007), which was designed as a successor of sympathy theory to solve the problem of opaque interactions. For reasons of space, argument clarity and text integrity, this approach was not originally incorporated in *Survival of the Fittest*. An Addendum to this book is offered, however, presenting the workings of the Candidate Chains (OT-CC) subtheory against the Chilean data.

ACKNOWLEDGEMENTS

I would like to thank my former supervisor, Professor Jerzy Rubach for years of invaluable advice, and my fellow doctoral students for their support and companionship, especially Joanna Zaleska – for inspiration and assistance in battling sympathy – and to Ola Broniś – for her enthusiasm and self-discipline which certainly made me strive even harder for the successful conclusion of my research.

I would also like to express my gratitude to Professor Hernán Emilio Pérez Muñoz from Universidad de Concepción, who provided me with assistance despite the thousands of miles of distance, as well as to Rodrigo Andrés Vivanco Torres and Jorge Esparza Inostroza, native speakers I had the pleasure to interview during my research on Chilean.

Last but not least, I would like to thank my friends and my family for believing in me and being always on my side, especially to my best friend, Agnieszka Stasiak, without whom I would not be who I am at present.

CHAPTER ONE

INTRODUCTION

Goals of the chapter

The aim of this chapter is to present the basic facts concerning Spanish in order to facilitate the analysis of Spanish lenition processes provided in the following chapters. Due to the fact that a large portion of data supplied in this book is based on the Chilean variety, background information referring specifically to Chilean will be provided in the following two sections. It must be pointed out, however, that most phonetic properties set forth in this chapter are shared by other non-conservative Spanish dialects, such as South American Spanish, the Spanish of the Canary Islands and Andalusia. Most importantly, *seseo* and *yeísmo*, as well as *s* and voiced stops weakening discussed herein are traits common to the majority of non-standard Spanish dialects on which the Spanish data provided in Chapter Three and Chapter Four are based. Major differences between Chilean and other dialects discussed in this book include coda condition repairs across a word and a prefix boundary (aspiration only vs. aspiration and deletion), assibilation of *r* (which is attested in some Latin American dialects, including Chilean, but not omnipresent in the Spanish-speaking world), weakening of *tf* to *f* and *k g x* palatalisation (the latter two being specific to Chilean). All of these processes are briefly discussed below, followed by the presentation of the Chilean phonemic inventory together with the explanation of phoneme-to-grapheme correspondences.

The place of Chilean Spanish on the Spanish dialectological map

Spanish can be subdivided into a multiplicity of dialects scattered across the Iberian Peninsula, the Canary Islands, Balearic Islands, the Caribbean, Central America and South America. Uniformity in phonetic and/or phonological terms can hardly be expected with such an immense geographical expansion of Spanish-speaking communities. A significant

number of linguists have attempted to gather the necessary empirical evidence and theoretical background and present a comprehensive account of Spanish dialectal differences. Works concentrating on particular Latin American varieties, however, are scarce due to the fact that sociolinguists, phoneticians and historical linguists tend to focus on larger areas and characteristic features corresponding to particular geographical regions. Thus, classic works, such as Henríquez Ureña (1921), Menéndez Pidal (1942), Alarcos Llorach (1950), Rosenblat (1965) or Lapesa (1988), have provided a thorough description of the principal features governing the Spanish of each geographical area under investigation, proposing demarcation lines between the various linguistic tendencies (encompassing phonetic, lexical and morpho-syntactic properties) and serving as the basis for the construction of atlases of the Spanish dialects (e.g. *Atlas Lingüístico de Hispanoamérica* by Alvar & Quilis 1984 and a series of country-specific atlases for selected Latin American and European dialects). Among the works devoted specifically to Chilean, *Introducción al estudio del español de Chile* by Ambrosio Rabanales (1953), *Estudio fonológico del español de Chile* by Ismael Fuentzalida (1952-53) and the most renowned *La lengua castellana en Chile* by Rodolfo Oroz (1966) can be enumerated. An Atlas for the dialect was elaborated by Araya, Contreras, Wagner & Bernales (1973).

Nevertheless, most of the literature concerning Latin American Spanish is purely descriptive and focused on sociolinguistic aspects of language. Moreover, Spanish dialectologists focus on the Spanish grammar as a whole, including morphology, syntax, lexical differences and social aspects of language, phonetics and phonology being only a small portion of the resultant works. Much attention is also paid to the historical facts, demographic factors and cultural aspects of linguistic variation in the Spanish-speaking world. Furthermore, even when purely phonetic, works on the Spanish grammar tend to present Peninsular Spanish phonetics and phonology in detail, with a few side remarks or a short chapter on Latin American differences compared to European Spanish, disregarding the fact that the 'general Spanish' of the northern part of the Iberian Peninsula is in fact the minority option.¹

The vast majority of Spanish varieties are 'non-standard' and should be paid much more attention. Although some uniformity may be found among the various Spanish dialects, there is still a substantial number of phonetic and phonological phenomena which deserve closer examination and an individual, unidirectional approach.

Notwithstanding the lack of a comprehensive phonetic description of Chilean, the facts necessary for further analysis on the dialect can be

gathered based on the available descriptive material focused on Chilean (e.g. Oroz 1966, Sadowsky & Salamanca 2011) and the characteristic traits of Latin American Spanish in general (Canfield 1962, Resnick 1975, Lipski 1994, Alarcos Llorach 1950). According to linguists specialising in Spanish dialectology, Chile can be classified as a uniform dialectal area differing both from the neighbouring Río de la Plata dialectal zone encompassing Argentina, Uruguay and Southern Brasil, and from the northern mountainous areas of Bolivia, as well as Perú, each with a slightly different dialectal profile. Thus, Chilean Spanish presents several of the features deemed typical for South American Spanish as opposed to the European and, to some extent, Central American variants. The relevant traits are listed below.

Seseo

Seseo is the most characteristic feature of Latin American Spanish. It is described as the lack of opposition between the dental and the alveolar voiceless fricative (θ/s) giving rise to a series of homophones, e.g. *vez* ‘time’ [bes] and *ves* ‘you see’ [bes].

Yeísmo

Yeísmo is characterised as the loss of opposition between the lateral palatal $\ç$ and the palatal fricative j in words such as *llamo* ‘I call’, *pollo* ‘chicken’ vs. *yeso* ‘plaster’, *joya* ‘jewel’.

Apical/laminal s

The *s* of most Latin American dialects is typically produced with the tongue blade forming a narrowing in the area of the alveolar ridge, as opposed to the ‘thick’ Iberian Spanish variant consisting in a closer approximation of the tongue apex accompanied by tongue retraction (ζ). Chilean *s* is roughly equivalent to the English voiceless alveolar fricative.

Aspiration and loss of s

S aspiration and/or loss consists in the weakening of the alveolar fricative to *h* via debuccalisation or complete *s* dropping depending on the context and other dialectal traits, usually in coda position (e.g. *esto* ‘this’ [eh.to], *dos* ‘two’ [doh] or [do]).

The production of *x*

Peninsular Spanish typically has both the uvular and the velar variant of the dorsal fricative (χ or *x*). The uvular variant is not attested in Latin America. It is either replaced by the velar fricative in all contexts or weakened to the glottal fricative (in the Caribbean).

Affricate weakening

The post-alveolar fricative *tʃ* is weakened to *f* in some Spanish varieties, such as Chilean (e.g. *mucho* ‘a lot’ [mu.fo]).

Intervocalic stop weakening

Latin American varieties typically weaken intervocalic voiced stops, especially *d* and *b*, to weak approximants or delete them completely. Deletion applies especially to words ending in *-ado*, *-ido*, *-aba*.

ASSIBILATION

Multiple trills, *tr-* clusters and word-final flaps are typically assibilated producing *ř* and *tř*, respectively. The fricative variant may be devoiced, which is the case in Chilean, for which the \downarrow symbol will be used.

The Chilean phonetic inventory

As far as its consonantal system is concerned, Chilean Spanish distinguishes six plosive sounds [p t k b d g]. Voiced plosives appear only after a pause and after nasals. In other contexts, their corresponding fricative [β ð ɣ] or, most often, approximant [β̞ ð̞ ɣ̞] variants are pronounced. As opposed to English, Spanish [t d] are dental, and not alveolar. In orthography, /t d p/ correspond to *t*, *d*, *p*, respectively. The phoneme /k/ corresponds to *c* before *a*, *o*, *u*, as in *cosa* ‘thing’, *cubrir* ‘to cover’, *casa* ‘house’. Sequences *que-* and *qui-* have the palatal variant, e.g. *queso* ‘cheese’ [ce.so].² The phoneme /b/, with its two allophones, corresponds to *v* and *b*; /g/ corresponds to *g* before *a*, *o*, *u*, e.g. *gato* [ga.to] ‘cat’. The palatal variant of the phoneme is produced before front vowels (*gu* before *e*, *i*), e.g. *guiso* [ji.so] ‘stew’.

The voiceless velar fricative /x/ corresponds to *j* before back vowels e.g. *caja* [ka.xa] ‘box’, *joya* [xo.ja] ‘jewel’. When *j* and *g* stand before

front vowels (*e, i* in orthography), palatalisation takes place: *gitano* [çi.ta.no] ‘gipsy’, *mujer* [mu.çer] ‘woman’.

The alveolar fricative /s/ is realised as a voiceless alveolar fricative in the onset, e.g. in *semana* ‘week’, *seco* ‘dry’, and as a voiceless glottal fricative in the coda, e.g. *esperar* [eh.pe.rar] ‘to wait’. In orthography, /s/ corresponds to *s, c* before *e, i* and *z*, as in *caza* ‘hunting’, *celda* ‘cell’.

The voiceless labiodental fricative /f/ corresponds to *f* in all contexts. It has a bilabial allophone before [u, w], e.g. *fue* ‘he/she went’ [φwe].

The voiced palatal fricative /j/ corresponds to *y* and *ll* in all positions, as well as *hi* at the beginning of a word. Its affricate variant [dj] appears usually after a pause and when preceded by a nasal sound or *l*, as in *el yugo* ‘a yoke’, *un hielo* ‘an icecube’, *cónyuge* ‘spouse’, *yo* ‘I’.

The voiceless post-alveolar affricate /tʃ/ corresponds to *ch* in orthography and can be compared to the English /tʃ/ in *chair*. It is often reduced to the post-alveolar fricative [ʃ] in Chilean.

There are three liquids in Chilean Spanish: an alveolar lateral sound /l/ which corresponds to *l* in spelling, e.g. *lima* ‘lime’, and two rhotic sounds – a simple alveolar tap /ɾ/ and a multiple trill /r/. The multiple variant appears in word-initial position, before *n, l* or in the case of graphic *rr* in the middle of a word, e.g. *rosa* [ro.sa] ‘rose’, *Enrique* [en.ri.ce] ‘Henry’, *alrededor* [al.re.ðe.ðor] ‘around’, *perro* [pe.ro] ‘dog’. The flap has a voiceless fricative variant word-finally and after *t*, e.g. *cuatro* [kwa.tɔ] ‘four’, *hacer* [a.seɾ] ‘to do’.

Chilean nasal sounds include: bilabial /m/, alveolar /n/ and palatal /ɲ/, which correspond to the graphic *m, n* and *ñ*, respectively. The alveolar nasal undergoes assimilation to the following sound, producing e.g. retracted [ŋ] in *ancho* ‘wide’ and [ɲ] in *tengo* ‘I have’.

As far as Spanish orthography is concerned, it is important to note that *h* is mute in Spanish. Thus, *hoja* ‘leaf’ is pronounced [o.xa] etc. The full inventory of Spanish consonants is presented in (1) below.

(1) Spanish consonants

/p/	→	[p] voiceless bilabial plosive	pobre ‘poor’
/t/	→	[t] voiceless dental plosive	tengo ‘I have’

/k/	↗	[k] voiceless velar plosive	cara 'face'
	↘	[c] voiceless palatal plosive	queso 'cheese'
/b/β	↗	[b] voiced bilabial plosive	boca 'mouth'
	→	[β] voiced bilabial fricative	vaca 'cow' la boca 'the mouth'
	↘	[β̞] voiced bilabial approximant	lobo 'wolf' la boca 'the mouth' lobo 'wolf'
/d/	↗	[d] voiced dental plosive	duro 'hard'
	→	[ð] voiced dental fricative	conde 'earl' crudo 'raw'
	↘	[ð̞] voiced dental approximant	todo 'all' crudo 'raw' todo 'all'
/g/	↗	[g] voiced velar plosive	gorra 'cap'
	→	[ɣ] voiced velar fricative	hongo 'fungus' la gorra 'the cap'
	↘	[ɣ̞] voiced velar approximant	fuga 'escape'
	↘	[j] voiced palatal plosive	la gorra 'the cap' fuga 'escape'
/x/	↗	[x] voiceless velar fricative	guitarra 'guitar' guerra 'war'
	↘	[ç] voiceless palatal fricative	juego 'game' jamás 'never'
/s/	↗	[s] voiceless alveolar fricative	gente 'people' mujer 'woman'
	→	[h] voiceless glottal fricative	saco 'sack'
	↘	[z] voiced alveolar fricative	esto 'this' mismo 'same'

/f/	↗	[f] voiceless labiodental fricative	fino ‘thin’
	↘	[ɸ] voiceless bilabial fricative	fue ‘went’ furioso ‘mad’
/j/	↗	[j] voiced palatal fricative	la lluvia ‘the rain’ ayer ‘yesterday’
	↘	[dʝ] voiced palatal affricate	llovió ‘it rained’ yo ‘I’
/tʃ/	↗	[tʃ] voiceless post-alveolar affricate	hacha ‘axe’
	↘	[ʃ] voiceless post-alveolar fricative	‘Chile’
/l/	→	[l] alveolar lateral	lata ‘can’
/r/	→	[r] multiple alveolar trill	rata ‘rat’ perro ‘dog’
/ɾ/	↗	[ɾ] alveolar tap	pero ‘but’
	↘	[ɻ] voiceless alveolar fricative	comer ‘to eat’ tres ‘three’
/m/	→	[m] bilabial nasal	mudo ‘mute’
/n/	→	[n] alveolar nasal	nada ‘nothing’
/ɲ/	→	[ɲ] palatal nasal	España ‘Spain’

Chilean vowels correspond to the standard Spanish inventory encompassing /i e a o u/. /e o/ have close variants [e o] in certain contexts (especially in open syllables). Linguists differ in their opinions on the exact distribution of the open and close mid vowels as it is not entirely predictable and depends on several different factors, including

diphthongisation, fortition and gliding. According to Alarcos Llorach (1950), however, the degree of opening is not a distinctive feature in the case of the allophones of Spanish vowels. Whether this applies to the Chilean variety as well requires further investigation. For the purposes of this book, the open variants of Spanish mid vowels will be used in transcriptions.

Besides the five simple vowels, Spanish has also glides *j* and *w* (e.g. *rueda* [rwe.ða] ‘wheel’, *tiempo* [tjem.po] ‘time’), as well as falling and rising diphthongs, although it is questionable whether all of them can be qualified as diphthongs due to the fact that the falling diphthongs are not necessarily monophonemic. For instance, the vocalic sequence [ei] is part of one syllable in *rey* ‘king’, but is divided into two sounds in the plural *reyes* [re.je] or [re.je]. The same applies across word boundary: *hoy* ‘today’ [oi], but *hoy es tarde* [o.jeh.tar.ðe] / [o.jeh.tar.ðe] ‘it's late today’. More details on the subject of vowels and diphthongs in Spanish can be found in Alarcos Llorach (1950).

CHAPTER TWO

FRICATIVE LENITION AS AN INSTANCE OF SOUND CHANGE

This survival of the fittest, which I have here sought to express in mechanical terms, is that which Mr. Darwin has called 'natural selection,' or the preservation of favoured races in the struggle for life.

—Herbert Spencer (Principles of Biology 1864)

Lenition and biology – an introduction

In biology, species typically develop certain functional advantages over time. Those members of a species which are inferior or disadvantaged compared to the remaining members of that species gradually die out, while those members which are superior are the ones that survive and pass the functional advantage on. This is usually referred to as natural selection, as defined by Charles Darwin. This evolutionary phenomenon consists in the preservation of a functional advantage that enables a species to compete better in its habitat. Thus, undesirable traits are eliminated gradually over time. According to Darwin, this is not a haphazard process – organisms which are more suited to their environment are more likely to survive, while those ill-suited die out. The phenomenon has been also referred to as ‘the survival of the fittest’, a term coined by Herbert Spencer and then used by Darwin himself: ‘This preservation of favourable variations, and the destruction of injurious variations, I call Natural Selection, or the Survival of the Fittest.’ (Darwin 1869.)

The survival of the fittest gave rise to the so-called social darwinism and in general, to the transfer of evolutionary ideas to the realm of other sciences, such as sociology or psychology. Interestingly, it offers an insightful reinterpretation also in linguistic terms. Alluding to the resistance of organisms and their relative ‘suitability’, the survival of the fittest can be viewed as a parallel to the disappearance of certain sounds over time and inalterability of others. Those sounds which are considered weak (or disadvantaged, either due to their internal structure or their position within a given constituent) tend to change their specifications and gradually fade, while those considered strong tend to resist change or even

strengthen. This distinction between the 'weak' and 'strong' notions, in turn, alludes to the terms 'lenition' and 'fortition', respectively. Throughout the history of linguistics, however, the parallel between *lenis* and *fortis* and what is now commonly referred to as weakening vs. strengthening has not always been drawn in a uniform fashion. A brief outline of the notion of lenition and related concepts over the history of phonology would be therefore the right starting point for further discussion. This is precisely the goal of this chapter.

Thus, the next section discusses the current understanding of lenition and the concept of strength, providing insight on strength scales established in the most recent works in linguistics. Then I go back in time, aiming at a thorough presentation of the concepts underlying lenition processes, tracing both the origin of the term and the use of related terms throughout the history of linguistics. This is followed by the discussion of 20th century developments in the field of phonology, variable interest in weakening processes and eventual diffusion of the term 'lenition' among linguists. The analysis of lenition in historical terms is then concluded in the section that follows, which discusses the most recent approaches to weakening phenomena originated in the 1990s and later. The sixth section seeks to look at lenition from a broader perspective – as an instance of general linguistic change across time and space. This adds a sociolinguistic dimension to the discussion of weakening processes. An attempt at presenting a few opposing views on the discussed phenomena prevalent throughout the history of linguistic thought is thus provided, followed by a confrontation of the two major concepts underlying most discussions on sound change in the seventh section: Neogrammarian regularity of change and 20th century lexical diffusion hypothesis. Following this discussion, I examine the concept of phonologisation as internal language restructuring triggered by sound change and then summarise the chapter, reinterpreting Chilean and English fricative lenition discussed in the previous chapters as part of a broader process of linguistic change.

Lenition – current definition and strength trajectories

What is commonly referred to by linguists as weakening is currently being treated as roughly the same as lenition, based on the concept of segmental or positional strength. However, the relation between the two terms is not as straightforward as might seem at first sight. A simple etymological analysis of the two terms suffices to encounter a slight mismatch: weakening alludes to the term 'weak' as opposed to 'strong'

while the term ‘lenition’ comes from the Latin verb *lenire*, alluding to *lenis* – in itself meaning ‘soft’. The equivalent of ‘weak’ in Latin would be the term *debilis*, also used by some linguists a few centuries back. It would be therefore interesting to trace the evolution of the terms *lenis*, *debilis*, *fortis* and ‘lenition’ on the one hand, and ‘weak’, ‘strong’, ‘soft’ and ‘weakening’ on the other in order to determine how and when (or maybe if) these terms actually converged. First, however, the current definition of weakening/lenition must be provided.

The task is not easy due to the fact that various linguists view lenition processes differently depending on the theoretical framework. Some approach the subject in terms of effort, suggesting that lenition is a process whereby speakers aim at producing sounds with the least articulatory effort possible and effort reduction leads to the reduction of featural material within a given sound (e.g. Kirchner 1998). Others see functional motivation behind the process or present a perception-based approach (Steriade 1993, 1995), while yet another group of linguists see lenition as promotion of segments on the sonority scale (Foley 1977, Clements 1990, Hock 1991, Lavoie 1996). Nevertheless, all of these approaches to lenition converge on one important component: some notion of (relative) strength and, if analysed as a scale, demotion on that strength scale manifested via a series of phonological processes. Thus, linguists have proposed various strength scales (or trajectories), sometimes connected to the familiar sonority scale. They have also made a distinction between the sounds’ inherent and positional strength. A uniform definition of all these notions is difficult to find as the focus of attention differs from linguist to linguist. An attempt at a general explanation of the phenomenon is presented in several dictionary entries, for instance in Trask's *Dictionary of Historical and Comparative Linguistics*.

lenition (also **weakening**) Any phonological change in which a segment becomes less consonant-like than previously. A shift in character from left to right along any of the scales in Table 5 [geminate >> simplex; stop >> fricative >> approximant >> \emptyset ; stop >> liquid >> \emptyset ; oral stop >> glottal stop >> \emptyset ; non-nasal >> nasal; voiceless >> voice] may be regarded as a lenition; a lenition all the way to zero is **loss** [...] or **deletion**.

Trask (2000:190)

Although some of the changes encompassed by the scales presented by Trask are controversial, voicing, geminate simplification and lenition of stops via fricativisation and then approximantisation towards eventual segment loss are typically agreed upon as cases of consonant lenition.

nature and leads to total sound loss over time, which has been observed by phonologists in several languages in diachronic terms.

Working on the above and similar definitions of lenition and consonantal strength, linguists have made a reasonable attempt at grouping a series of phonological processes observed across time and space together under a common label. Despite being separate phonological phenomena, voicing, spirantisation, approximantisation, gliding, debuccalisation and the like are all part of a bigger, more general process. Each of them leads to the loss of relative segmental strength compared to the input sounds placed higher on the established strength scale. Thus, strength may be referred to as inherent to a given segment. Such inherent strength is a relative notion: segments are either stronger or weaker by comparison to other sounds. Fricatives, for instance, are weaker than plosives but stronger than approximants, which manifests itself in the directionality of spontaneous change observed in languages.

Another dimension pertinent to the concept of strength is the position occupied by a given sound in a given (prosodic) constituent. Typically, onsets resist change as opposed to codas. This means that codas are more likely to change, but does not render the ‘resilient’ onsets invincible against weakening processes. In the most advanced types of lenition, weak positions (such as codas) will undergo weakening first, onsets being the last to surrender. This is thoroughly examined by Ségéral and Scheer (2008) who distinguish four degrees of positional strength: word-initial onsets, word-internal onsets (post-consonantal position), word-final codas and word-internal codas (pre-consonantal position), arguing that processes affecting e.g. word-internal codas are also likely to affect word-final codas at the next advancement stage, but the reverse is not true. Similarly, it is not possible for word-initial onsets to resist change if word-internal onsets do not. In other words, word-internal patterns prevail and margins may or may not follow suit. This is somewhat compatible with Spanish *s*-weakening discussed in Chapter Three. Typically, internal coda *s* undergoes aspiration. Word-final codas mirror this pattern only in a limited number of dialects and the process advances in a linear fashion, resisting change pre-pausally but admitting it phrase-internally or, eventually, becoming an across-the-board phenomenon. The behaviour of sounds analysed by Ségéral and Scheer involves yet another dimension of strength: the relative ability to inhibit change. Thus, either thanks to their strong position or to their very nature, segments may resist lenition while their weaker counterparts will be more likely to undergo a given process.

Lenition – historical development of the term

Following the above introductory discussion, the time has come to shed some light on the origin of the term ‘lenition’ and the notions it has been used to designate. Honeybone (2008) traces back the first use of the term in literature and points out the difference between its actual first mention and its *locus classicus*, i.e. ‘the place in which it became influential’. Thus, the first use of the term dates back to 1898 when a Celtic linguistics specialist Rudolf Thurneysen published a review of a book on Irish mutation by Pederson. The exact wording of the relevant fragment is presented below.

Because it seems to me that **every** case fundamentally involves a decrease in the intensity of articulation, and because the current state of Celtic studies requires international (and hence Latin) terms, I would like to suggest **lenition** (from *lenire*), for Irish ‘aspiration’ as well as for British ‘destitution’ or ‘vocalic mutation’, and thus to speak of ‘leniting final position’ and ‘lenition in initial position’.

(Thurneysen 1898:43, in Honeybone 2008:19)

The terms suggested for the process by Thurneysen in the original are German *Lenierung* or simply *Lenition*, which is easy to translate into English without causing confusion. Yet it was not until 1909 when the term ‘lenition’ became widespread. Thurneysen used the term throughout his publication *Handbuch des Alt-Irischen* (‘Handbook of Old Irish’) dated 1909 and this was then accepted and followed by others. For the time being, however, ‘lenition’ was strictly linked with Celtic phonological processes and its use was limited in this way for some time (Honeybone 2008). What is more, the term itself suggests that the processes encompassed by the joint label ‘lenition’ should be treated as softening rather than as some kind of weakening (as already mentioned, *lenire* means ‘to soften’ in Latin). This is an interesting line of reasoning with a history of its own: the term ‘soft’ was used by various linguists in the past e.g. as opposed to ‘hard’ to distinguish between what we now call voiced and voiceless sounds. Let us then analyse all the implications supplied by ‘lenition’ within the meaning provided above, which point to such concepts as softness and strength.

The exact difference between the terms *lenis* and *debilis* is hard to trace in history because various grammarians used the terms inconsequently or without explaining the relationship between the two. Both terms were used in the past, however, to describe consonantal features and distinguish between natural classes. One of the earliest works

mentioning both *lenis* and *debilis* is Roger Bacon's volume on Greek grammar. The relevant excerpt was retrieved by Honeybone.

Of such plosives, then, one should know that 3 are soft [*lenes*] and weak [*debilis*] sounds, three rough [*aspirate*] and strong [*fortis*] sounds, and 3 middling. Pi, beta and phi are related, though, and on account of this are often confused. They sound between the lips but pi is soft [*lene*], beta middling [*mediocre*] and phi rough [*aspiratum*]...

(Bacon, 13th c. in Honeybone 2008)

Later on, descriptions based on the distinction between weak and strong or soft and hard sounds started to abound both in English works and in linguistic volumes written in other languages. Hart (1569), for example, describes the series /p, t, k/ as ‘breathed’, ‘unsounded’ or ‘hard’ and the series /b, d, g/ as ‘inward’, ‘sounded’ or ‘soft’ (Danielsson 1963), while Mulcaster (1582, in Fónagy 1963) describes <g> before *a, o, u* as strong, and sometimes strong and sometimes weak before *i, e*, which alludes to the difference in the manner of articulation between *g* and *ɔ̃*. The distinction hard/soft or strong/weak used with respect to manner of articulation was actually quite frequent among linguists. The difference between *t, d* and *θ, ð* was usually described in terms of softness. Sometimes the two distinctions converged, as above, at other times only one of them was applied. The relevant equivalence of the soft/hard and weak/strong distinction is again quoted by Honeybone (2008:28).

...everyone who has written about language up till now [has given] us no other difference between B and P ... than one in which the former has a **milder** or **softer** [*gelinder oder weicher*] pronunciation and the latter a **stronger** or **harder** [*staerker oder haerter*] one. Because of this, we speak of a **soft** B and a **hard** P [*ein weiches B und ein hartes P*].

(von Kempelen 1791:237, in Braun 1988:31)

Based on examples provided above, it is difficult to find uniformity of forms or concepts in use across centuries and languages of those who described the various pronunciations of sounds they undertook to analyse. The four words of interest here were sometimes used interchangeably, not at all times however. What is more, they were either applied with reference to the manner of articulation or the laryngeal state, the common denominator being the fact that both changes in manner and in the laryngeal state involve processes contained in what is now considered lenition. As noted by Honeybone (2008), perhaps the first treatment of weakening as a general process or tendency in language within the present meaning of the word was provided by Peile in his book on phonetic

change in Greek and Latin (1875), the first linguistic work dedicated in its entirety to sound change. On page 7 of this volume, he states that ‘the general effect of phonetic change is to substitute a weaker for a stronger sound’, a sound which ‘requires less effort to produce’.

The distinction hard/soft draws on the laryngeal voiced/voiceless distinction in Peile’s book, which basically reiterates preceding descriptions, but the relevant change from hard to soft in consonants is referred to as weakening and not as softening. Later on, with the development of the Neogrammarian school focused specifically on sound change, processes involving changes in voicing and other laryngeal specifications were referred to as softening and not as weakening. This can be observed in German works of such linguists as Brugmann or Blass, among many others.⁴ The terms used for sounds undergoing voicing, however, are typically Latin *tenuis* and *media* or *stimmhaft* and *stimmlos* [‘voiced’ and ‘voiceless’], while the opposition *fortis* vs. *lenis* is used to refer to differences both in the laryngeal state and other articulatory features (Honeybone 2008:35). Thus, though etymologically incompatible, *fortis* and *lenis* started to be used as exact oppositions in the nineteenth century. According to Braun (1988), at that time linguists started to follow the definition proposed by Sievers in 1885 suggesting that *lenis* sounds are articulated with lower energy and are shorter in duration than *fortis* sounds. The latter distinction seems therefore more abstract than the simple distinction between voiced and voiceless sounds, involving much subtler, harder to explain phonetic facts. This is demonstrated in excerpts from Sievers’ book on phonetics.

The Swiss, for example, differentiate between *pa* and *ba*, *ta* and *da* through stronger pressure in *p*, *t* and weaker pressure in *b*, *d*, but both sounds are voiceless.... Here the only remaining tangible differentiating feature is the difference in strength [*Stärkeunterschied*], and here we **have to** use the expressions **Fortis** and **Lenis**...

(Sievers 1885:67 in Honeybone 2008)

Apart from the above, reference to lenition or weakening of sounds as such was scarce in the 19th and at the beginning of the 20th century. Softening was usually the term used to describe laryngeal changes. Nevertheless, the concept of weakening arose in some of the most influential works of the period by Henry Sweet (1877, 1900) who alluded to positional strength, calling weak what we now describe as coda sounds. Meanwhile, a significant descriptive work in French was published in 1890 by Paul Passy in which a direct reference is made to weakening as a separate type of sound change (*affaiblissement*). Another French work by