

1. AMERICAN RAISING: AN INTRODUCTION

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AMERICAN RAISING: WHAT IS IT? At the heart of the current volume of PADS are the English diphthongs /aɪ/ and /aʊ/, sounds that have been of long-standing interest to phonologists, phoneticians, dialectologists, and sociolinguists over much of the last century. Interest in these phones has in large part been due to the process traditionally known as Canadian Raising, in which the diphthongs surface with a raised nucleus (that is, as [aɪ] and [aʊ]) before voiceless consonants. American Raising shows a related but distinct pattern: /aɪ/-raising occurs without concomitant /aʊ/-raising. The current volume comes at a time when American Raising is attested in an ever-increasing number of American English dialects and is intended to serve as both a snapshot and an invitation. The chapters compiled herein examine American Raising from phonetic, phonological, and sociolinguistic perspectives. They address diachronic and synchronic issues, presenting data for dialects from many regions of the United States, dialects where raising is old and dialects where raising is new. We hope that they invite future work from linguists of many stripes by demonstrating that raising bears on many issues. As noted by Elliott Moreton (pers. comm., Dec. 7, 2020), “If you are working on any of the following problems: opacity, contrast and allophony, prosodic and morphological conditioning, lexical exceptions, phonologization, microvariation, acquisition, (etc.), then American Raising gives you an opportunity to test both synchronic and diachronic hypotheses using data from easily-accessible dialects which exhibit phonologizations of the same phonetic precursor at a wide range of time depths.” As such, this book is part of a conversation that preceded us and will continue into the future.

Historically, English diphthong raising has been widely attested throughout Canada (e.g., Ayearst 1939; Joos 1942; Chambers 1973; Onosson 2010; Swan 2017). The phenomenon is not limited to Canadian dialects of English, however. It is also attested throughout much of the English-speaking world, such as in Eastern England (Britain 1997) and in various U.S. locales, including Upstate New York (Vance 1987), Vermont (Roberts 2007), northern Minnesota and North Dakota (Allen 1989), Ann Arbor, Michigan (Dailey O’Cain 1997), Philadelphia (Fruehwald 2013), Michigan’s Upper Peninsula (Rankinen 2014), New Orleans, Louisiana (Car-

michael 2015, 2017), Mississippi (Moreton 2016), the Pacific Northwest (Swan 2017), and the areas in and around Chicago (Hualde, Luchkina, and Eager 2017), Kansas City, Missouri (Strelluf 2018), and Fort Wayne, Indiana (Berkson, Davis, and Strickler 2017; Davis, Berkson, and Strickler 2020). For thorough documentation of English diphthong raising, see Moreton (2021 [this volume]). It is generally the case that U.S. dialects feature /aɪ/-raising but not /aʊ/-raising, and so we use the term AMERICAN RAISING to refer to the pattern wherein /aɪ/ raises to [aɪ] before voiceless consonants.¹ In most cases in the United States, this occurs in the absence of concomitant raising of /aʊ/ to [aʊ], thus distinguishing American Raising from Canadian Raising.²

Phonological interest in diphthong raising has been driven in large part by a particular puzzle. Namely, as shown in table 1.1, raising overapplies in some settings and underapplies in others. In the straightforward cases, the lower variant of the diphthong occurs before voiced sounds, as in items a and b, while the raised variant occurs before voiceless segments, as in items c–h. The observation that raising occurs before voiceless consonants (stated in rule format, something like /aɪ/ → [aɪ] / __C_[-voice]) is not always surface true, however, as raising overapplies before *t*-flaps. This is shown in items i–k, which can be contrasted with the forms containing *d*-flaps, as in items l–n. Moreover, raising also underapplies: as shown in items o–q, the unraised variant of the diphthong sometimes surfaces unexpectedly before a voiceless trigger. This occurs when the trigger is foot-external (Chambers 1973).³

Raising shows all the hallmarks of a phonological process in that it overapplies before flaps and underapplies in certain prosodic environments. Stated differently, if raising were phonetic then we would expect it to occur before any voiceless segment, regardless of foot structure (e.g., *write* → [raɪt] and *titanic* → [taɪtænɪk]) but not before *t*-flaps (e.g., *writing* → [raɪɪŋ]), but this is not the observed pattern. While lexical exceptions tend to abound—for example, in many raising dialects underlying flap items like *spider* and *cider* raise—the patterns illustrated in table 1.1 are uniformly present in older, well-established raising varieties in Canada and elsewhere (Chambers 1973; Kaye 1990; Fruehwald 2016). This has prompted robust phonological discussions around opacity in particular (Halle 1962; Chambers 1973; Mielke, Armstrong, and Hume 2003; Idsardi 2006) but also marginal contrasts (Hualde, Luchkina, and Eager 2017) and learnability (Pater 2014).

In addition to robust phonological debate, there has also been interest in both the phonetic and sociolinguistic properties of raising. With regards to phonetics, there is general agreement that diphthong-raising has phonetic roots with two proposals concerning the nature of those phonetic roots. One proposal is OFFGLIDE PERIPHERALIZATION (Moreton and Thomas

TABLE 1.1
Examples of Raised and Unraised Diphthongs

	<i>Orthography</i>	<i>Underlying Form</i>	<i>Surface Form</i>
a.	<i>bide</i>	/baɪd/	[baɪd]
b.	<i>knives</i>	/naɪvz/	[naɪvz]
c.	<i>bite</i>	/baɪt/	[baɪt]
d.	<i>rice</i>	/raɪs/	[raɪs]
e.	<i>knife</i>	/naɪf/	[naɪf]
f.	<i>bike</i>	/baɪk/	[baɪk]
g.	<i>Nike</i>	/naɪki/	[naɪki]
h.	<i>viper</i>	/vaɪpə/	[vaɪpə]
i.	<i>biting</i>	/baɪtɪŋ/	[baɪtɪŋ]
j.	<i>cited</i>	/saɪtəd/	[saɪrəd]
k.	<i>whitest</i>	/waɪtəst/	[waɪrəst]
l.	<i>biding</i>	/baɪdɪŋ/	[baɪrɪŋ]
m.	<i>sided</i>	/saɪdəd/	[saɪrəd]
n.	<i>widest</i>	/waɪdəst/	[waɪrəst]
o.	<i>citation</i>	/saɪ'teɪʃən/	[saɪ'teɪʃən]
p.	<i>psychotic</i>	/saɪ'kɑtɪk/	[saɪ'kɑrɪk]
q.	<i>titanic</i>	/taɪ'tæɪnɪk/	[taɪ'tæɪnɪk]

2007), which highlights two phonetic observations: (1) vowels tend to be peripheralized before voiceless sounds (Thomas 2000), and (2) diphthong nuclei tend to be abbreviated. Because the nucleus is abbreviated, it is an easier target for coarticulation. A peripheralized offglide can thus trigger raising of the nucleus relatively easily via coarticulation. ENHANCEMENT OF CLIPPING, meanwhile, points to the shortness of vowels before voiceless segments as a critical element of the raising process (Bermúdez-Otero 2014, 2017). The observation here is as follows: vowels are shorter, or clipped, before voiceless codas, and the shortness of the vowel serves as an external cue to the voicing of the following segment. Under this view, it is clipped vowels—rather than vowels before voiceless segments—that are targets for raising, and raising of a clipped vowel serves to further enhance that external cue to consonant voicing. It is, as Bermúdez-Otero notes, “an enhancement of an enhancement” (per. comm., Sept. 19, 2017).

With respect to the sociolinguistic aspects of raising, there are many avenues that one can explore, such as how raising spreads through social networks once it starts in a community, as well as around the matter of what it indexes: raising seems to index a local identity in Fruehwald’s (2013) Philadelphia work, but an outward orientation in Rankinen’s (2014) work on Michigan’s Upper Peninsula. It is unclear what raising indexes in Southern dialects, such as the Mississippi dialect described in Moreton (2016), where it cooccurs with monophthongization, a prototypical Southern feature.

The phonological, phonetic, and sociolinguistic issues mentioned above interact with the nature of incipient /aɪ/-raising. Recent research by Berkson, Davis, and Strickler (2017), Strelluf (2018), and Dodsworth and Kohn (2021 [this volume]) has documented the emergence of /aɪ/-raising in such places as northeast Indiana, the Kansas City area, and Raleigh, North Carolina, all areas that traditionally did not have such raising. Many questions can be posed about incipient raising: What patterns of raising are instantiated? Is incipient raising phonetic? In a variety of English where raising is emergent, how and where would raising begin? Which speakers would be the first to show evidence of raising, and which word forms would be the first to display raising? How would raising spread, both socially within the community and linguistically within the lexicon?

Recent works have suggested that now is the time to probe such questions. These works have noted American Raising in very specific locations that are adjacent neither to the Canadian border nor to each other (Fruehwald 2016; Strelluf 2018; Berkson, Davis, and Strickler 2017; Davis, Berkson, and Strickler 2020) and have documented a pan-regional incipient version of /aɪ/-raising that is in some ways similar to and in other ways different from its Canadian counterpart. Specifically, the American raising data documented in Strelluf (2018) for the Kansas City area and in Berkson, Davis, and Strickler (2017) and Davis, Berkson, and Strickler (2020) for the Fort Wayne, Indiana, area reaches a similar conclusion: noticeable raising is only present beginning with the generation of speakers born in the 1990s or slightly before, with an older version of American Raising documented in Mississippi by Moreton (2016).

This volume is therefore presented against a very specific backdrop: American Raising is becoming ever more widespread, occurring in many communities in different locales. Thus, while incipient raising remained undocumented for a long time, onset of raising in multiple, distinct locales makes it possible to document the origin and spread of the feature. Moreover, an interesting question arises in locations of the United States that have displayed long-standing diphthong raising: do younger speakers in such communities display a raising pattern similar to that of the older generation of speakers, or do they display characteristics that may be more similar to those of the younger speakers in incipient varieties? By bringing together phonologists, phoneticians, and sociolinguists, the chapters contained herein take advantage of this particularly interesting moment in time, addressing a wide variety of issues concerning American Raising and its spread.

The current volume addresses different aspects of American Raising and includes eight chapters in addition to this introduction. Chapters 2 and 3 focus on phonological and phonetic issues, respectively. Chapter 2, “Phonological Abstractness in English Diphthong Raising” by Elliott More-

ton, provides a valuable overview that first situates American Raising within a typology of English diphthong raising and notes that the phonologization of diphthong raising has occurred independently in multiple dialects at different time spans. Moreton discusses the phonetics of diphthong raising and details the abstract conditioning of mature phonological /aɪ/-raising varieties that include considerations of prosody and morphology by focusing in detail on a Mississippi variety. Moreton then lays out three competing hypotheses as to how phonological patterns acquire abstract conditioning and sketches out different ways that English diphthong raising might distinguish among them. The issues raised by Moreton reverberate directly or indirectly with all the other contributions to this volume.

Chapter 3, Erik Thomas and Jeff Mielke's "The Phonetic Development of American Raising in Eastern Ohio," compares consultants for the *Dictionary of American Regional English (DARE 1985–2013)* born before World War I with subjects from a survey of eastern Ohioans born after 1970, many from the same communities as the *DARE* consultants. The chapter makes a methodological contribution by applying General Additive Mixed Models (GAMM) analysis to the raising data, thereby revealing previously unobserved phonetic details in the raising process. Specifically, tokens were taken from running speech (reading passages and conversation), and formant analyses were conducted acoustically using LPC. Single-point measurements were examined, including the point of maximum F1 and at 25%, 50%, and 75% of the diphthong's duration. The expected results appeared: differentiation between prevoiced and prevoiced tokens was greatest at the 75% point, was more advanced in northern Ohio than elsewhere, and was much more evident for the younger group than for the older group. The GAMM analyses, however, provided a fuller picture. GAMM curves comparing prevoiced and prevoiced tokens for each speaker show which sections of the trajectories differ significantly. Speakers ranged from having no part of the trajectories significantly different to having the entire trajectory significantly different. A consistent pattern emerged in which the glide section was most likely to differ significantly and the allophonic separation spread backward to varying degrees, depending on the speaker, but never in the opposite direction. This finding is novel and important: the consistency in directionality makes it possible to map the geographic spread of American Raising in an original manner. The overall general pattern that emerges is that /aɪ/-raising has increased in Eastern Ohio with the younger group of speakers. While the process also occurs to a slight degree with older speakers, it has progressed noticeably among the younger group, especially those in the northern part of eastern Ohio.

Chapters 4–6 all focus on incipient American varieties of /aɪ/-raising, in dialects that historically did not have it. Each focuses on specific locales

where there is recent emergence of American Raising. In chapter 4, we along with Alyssa Strickler build on our previous work on Fort Wayne, Indiana in “Characteristics of Incipient American Raising and Lifespan Change: Focus on Fort Wayne.” This chapter details a number of characteristics of incipient /aɪ/-raising that distinguishes it from more mature varieties of raising. These include transparent raising whereby /aɪ/ does not raise before *t*-flaps (i.e., the presence in the community of Pattern B, as in Joos 1942), the lack of extension to noncanonical environments, such as in the word *spider*, and presence of raising in words like *Titanic* and *psychotic*, where raising has been shown to be blocked in mature varieties due to the prosodic conditioning. We also demonstrate that older speakers in the community who do show raising have an acoustic pattern of raising that is different from younger speakers and thus argue that such speakers display lifespan change distinguishing them from younger raisers.

Christopher Strelluf focuses on the emergence of American Raising in the Kansas City area in chapter 5, “The Actuation of American Raising in the Heart of America.” Noting the absence of a sociolinguistic or dialectological source of /aɪ/-raising in Kansas City, Strelluf acoustically documents the emergence of raising over the past several decades and seeks to account for the actuation of the innovation in the speech community. Formant measurements of the /aɪ/ diphthong for 91 Kansas Citians born from 1884 to 1999 reveal that American Raising is a recent but gradual innovation: over the course of the twentieth century, the PRICE vowel has evolved from a relatively monophthongal low vowel to an upgliding diphthong, thereby creating the phonetic precursor to actuate offglide raising. Offglide raising in turn provided the precursor for nuclear American Raising. The study also identifies emergent social meanings for American Raising among Kansas City females born in the 1990s that connect American Raising to high educational attainment and suggests that these social meanings are also necessary for the actuation of American Raising in Kansas City.

In chapter 6, “Supraregional Changes are Uncorrelated: A Community Comparison,” Robin Dodsworth and Mary Kohn compare two communities where /aɪ/-raising is relatively recent: Raleigh, North Carolina, and rural Kansas. The study builds on recent work (Tamminga 2019) examining whether particular speakers tend to lead clusters of linguistic changes or whether the leaders vary across linguistic changes. In this way the authors compare whether the leaders of other sound changes occurring in Raleigh and rural Kansas are also leaders in the more recent /aɪ/-raising. In Raleigh, some vocalic changes involved in the reversal of the Southern Vowel Shift (SVS) tend to pattern together across social groups and individuals. Dodsworth and Kohn examine whether or not the raising of the /aɪ/-nucleus before voiceless consonants shows the same social network patterns as seen

by the changes in the reversal of SVS variables. In a parallel investigation using data from three rural Kansas communities, the authors evaluate the relationship between /aɪ/-raising and other changes in progress, particularly the raising of the /eɪ/ glide and the backing and lowering of /æ/. The authors generally find that the leaders of /aɪ/-raising, a change occurring in multiple U.S. regions (i.e., American Raising), is not consistently led by the same speakers as the other variables in both locations; that is, /aɪ/-raising appears to be dominated by individual differences. They find no evidence that the individual-level characteristics promoting /aɪ/-raising are the same as those promoting the other supraregional variables.

Chapters 7–9 are similar to one another in that they concern locales that have documented /aɪ/-raising from an earlier period. The authors compare earlier generations of raisers to a more recent generation. In chapter 7, “/aɪ/-raising on the U.S. East Coast: Resurgence, Retreat, and Resilience,” Natalie Schilling investigates /aɪ/-raising in two East Coast communities where each of their unique dialects has developed over time in relative isolation: Ocracoke Island, off the coast of North Carolina, and Smith Island, Maryland, in the Chesapeake Bay. In both cases the author revisits earlier studies (pre-2000) of these communities that looked at various features (including raising) across several generations. Focusing on raising, Schilling compares more recent studies of these communities that include data from a much younger generation of speakers. Diphthong raising on Ocracoke Island is known to be unique because it also involves backing and favoring of raising in voiced environments, as in the stereotypical “hoi toid” for *high tide*. As Schilling shows, while this feature often occurs in dialect performance, its actual use by younger speakers is in retreat. On the other hand, /aɪ/-raising (without the backing of Ocracoke and with the favoring of voiceless environments) is a long-standing feature of Smith Island and shows resilience among the younger generation, who exhibit even greater acoustic distance in /aɪ/ before voiceless versus voiced consonants than older generations. Moreover, raising before *t*-flaps occurs much more with younger speakers than with older generations. Schilling discusses factors that have made the long-term outcome of raising different in the two communities under consideration, suggesting that the rise of tourism may be a factor in the retreat of raising among younger speakers in Ocracoke. This factor is necessarily absent in Smith Island, however, as it has never become a tourist destination.

The final two chapters examine the spread of raising in locations near Canada and investigate how raising in those areas may be similar to or different from Canadian raising. Both studies discuss /aɪ/-raising and /aʊ/-raising, given that the raising of /aʊ/ before voiceless consonants is a feature that distinguishes what we term American Raising from canonical Cana-

dian Raising. Wil Rankinen and Aaron Albin in chapter 8, “Apparent-Time Evidence of American Raising in Western and Eastern Lower Michigan,” examine the spread of diphthong raising (both /aɪ/ and /aʊ/) in three less urbanized counties in lower Michigan. A sample of monolingual English speakers, stratified by age and sex, was recruited from Kent, Muskegon, and St. Clair Counties. Speech data was elicited using both word list and reading passage tasks. Irrespective of county and task, prevoiceless nucleus raising only occurred for /aɪ/, and not /aʊ/, suggesting American Raising; however, both linguistic variables exhibit a change in progress: raising of prevoiceless nucleus of /aɪ/ appears to be led by younger women in more urbanized speech communities, while the unraised nucleus of /aʊ/ is led by younger men in more rural speech communities.

In the final chapter of the volume, “Same PRICE, Different HOUSE: English Diphthong Raising in Seattle, Washington, and Vancouver, British Columbia,” Julia Thomas Swan compares diphthong raising of both /aɪ/ and /aʊ/ among speakers in Vancouver and Seattle, two nearby urban centers separated by the U.S.-Canadian border. Swan shows that /aɪ/-raising before voiceless consonants is established in both cities, but that /aʊ/-raising is present only in Vancouver. Swan calls into question the use of /aɪ/-raising as a diagnostic feature separating American from Canadian varieties and notes the need to study the possible diffusion of /aɪ/-raising to rural areas and smaller cities.

The chapters in this volume show the current spread of American raising to locales that previously did not have it. The volume also indicates that even in locations where /aɪ/-raising was historically present, its realization among younger speakers may differ from that of older generations. The volume brings researchers from different backgrounds—phonologists, phoneticians, and sociolinguists—together to consider the issue of American Raising. The chapters included herein reflect these different perspectives and the different terminology used to describe English diphthong raising.⁴ In doing so we aim to provide insight into the range of questions that can be addressed through the lens of American Raising and to raise questions that future scholars may wish to address.

Again, we hope that this book is just one more step in a research program that began with those who came before us and will continue long into the future. Raising has been the focus of so many studies because it is a phenomenon that has so much to offer. Through it we can examine questions about phonological opacity, the initiation and spread of sound change, first- and second-language acquisition, the conditioning of allophony, the structure of the lexicon, and so much more. How does raising begin? Which words are affected first? Who acquires it first? How does it spread? What does it signify? How does it differ across dialects? It is also worth not-

ing that the pool of potential participants for research focused on raising is ever-expanding because it occurs—or is beginning to occur—in so many American dialects. It is therefore a candidate for study even when travel or funding are restricted (e.g., in a global pandemic). With all of this in mind, the current volume contributes to an ongoing conversation that continues to grow richer with each new voice that is added.

NOTES

1. The use of the term AMERICAN RAISING emanated from the discussion on the talk we presented with Alyssa Strickler at the 2019 annual meeting of the American Dialect Society in New York City. Based on further discussion after the ADS meeting, we organized a special session titled American Raising held during NWAV 48 at the University of Oregon on October 12, 2019. The session brought together researchers who were examining /aɪ/-raising in different U.S. locales, and it was from that special session that the present volume of PADS evolved.
2. See Raffelsiefen and Geumann (2016) on the acoustic difference between American English /aɪ/ and /aʊ/ that is suggestive as to why the raising process would target one but not the other.
3. Note that it is foot boundaries and not syllable boundaries that are relevant for raising. This is made clear by the difference in raising before intervocalic /k/ in *Nike* (table 1.1, item g) but not in *psychotic* (item p). Native English speaker judgments are fairly solid that the /k/ in both these words forms the onset of the second syllable. However, because of the stress pattern the second syllable begins a new foot in *psychotic* but not in *Nike*. This indicates that canonical Canadian raising is a prosodically conditioned rule sensitive to foot structure.
4. With one exception, we have not made strenuous efforts to maintain uniformity in terminology or transcription conventions across chapters, opting instead to accurately reflect the different ways in which various fields and scholars refer to these sounds and processes. We did ask authors to transcribe the diphthong as /aɪ/ if they did not have motivations to transcribe otherwise (e.g., as /ai/ or /ay/). We opted for this transcription to adhere to convention but note that there are arguments to be made for different transcriptions (see, e.g., Thomas and Mielke 2021 [this volume]).

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