



Phonetic Accommodation of Monophthong in the Utterances of *In Bruges*' Main Characters

MUTIA AZIZAH

Universitas 17 Agustus 1945 Surabaya, Indonesia

Email: mutiaazizah898@gmail.com

BRAMANTYA PRADIPTA

Universitas 17 Agustus 1945 Surabaya, Indonesia

bramantya@untag-sby.ac.id

Abstract. Phonetic accommodation refers to how speakers adjust their pronunciation during interaction, either by becoming more similar (convergence) or more different (divergence). This study investigates phonetic accommodation between two main characters, Ray and Ken, in the movie *In Bruges*. It explores the types of accommodation that occur, how their accent differences (Irish English vs. British English) influence the process, and whether their speech reflects experimental behavior. The analysis focuses on 50 utterances containing monophthong vowels, examined acoustically using Praat to measure formant frequencies (F1, F2, F3). Contextual factors such as emotion, conversational stance, and scene dynamics were also considered. Findings reveal that divergence is more frequent than convergence. Ray shows phonetic accommodation in 23 utterances (3 convergence), while Ken shows 27 (also 3 convergence). Most convergence is partial, typically involving shifts in only one formant. Ray consistently retains his Irish accent, especially in back vowels, while Ken occasionally deviates from Standard Southern British English norms. Convergence tends to appear in emotionally neutral interactions. Overall, the study suggests that even scripted movie dialogue can reflect natural phonetic accommodation, shaped by accent, identity, emotional tone, and interactional context.

Keywords: formant, *In Bruges*, monophthong, phonetic accommodation, vowel

INTRODUCTION

Accent is a crucial element of linguistic identity, serving as both a marker of geographical origin and social affiliation. As a key marker of cultural affiliation, accent reflects pronunciation patterns, word stress, and rhythm, contributing to the rich diversity within English varieties (Foulkes & Docherty, 2006). At the core of accent variation is pronunciation, which can be examined through the lens of phonetics, a field that studies the articulatory, acoustic, and auditory properties of speech (Ladefoged & Johnson, 2015).

Among all speech sounds, vowels are particularly salient in identifying accents due to their variability and perceptual prominence. Monophthongs, as stable vowels produced without glide, are especially useful in acoustic analysis because their consistent quality

allows for clearer comparisons across speakers. In English, accents differ not only in rhoticity, such as the retention of post-vocalic /r/ in Irish English versus its absence in Standard Southern British (SSB) English, but also in vowel quality, where sounds like /æ/, /ʌ/, and /ɜ:/ reveal systematic articulatory and acoustic differences (Knight, 2012; Wells, 2008). These distinctions not only mark geographical variation but also correlate with social perceptions, prestige, and stereotypes (Giles & Powesland, 1975; Coupland & Bishop, 2007), contributing to how individuals are evaluated in professional and interpersonal contexts. Moreover, accents function as expressions of identity, particularly for second language speakers, whose L1 interference often results in unique pronunciation patterns (Kachru, 1992; Flege, 1995), and may influence their sense of cultural attachment or assimilation. In some cases, speakers actively maintain features of their native accent as a form of cultural resistance or identity assertion (Trudgill, 2000; Hickey, 2007).

With the global spread of English, accent variation has expanded across Inner, Outer, and Expanding Circles (Kachru, 1985), with native accents such as Irish English and SSB (Standard Southern British) English providing rich sites of comparison. While Irish English tends to retain rhoticity and more conservative vowel articulations, SSB is characterized by non-rhoticity and vowel centralization, particularly in the realization of /ʌ/, /æ/, and /ɜ:/ . These differences are not merely phonetic; they signify deeper cultural and social distinctions and thus serve as valuable data in sociophonetic inquiry.

A central concept in sociophonetics is phonetic accommodation, the process by which speakers adjust their pronunciation to either converge with or diverge from their interlocutor's speech (Giles, 1973). Most previous studies on this phenomenon rely on experimental methods such as speech shadowing, Wizard-of-Oz setups, or scripted interactions to examine vowel convergence or divergence. However, speech from fictional contexts, such as film, may also reflect natural interaction patterns (Pardo, 2006), raising questions about whether phonetic accommodation appears in scripted yet conversational dialogue.

This study investigates phonetic accommodation in the movie *In Bruges* (2008), where two protagonists, Ray, an Irishman with a distinctly Irish accent, and Ken, a British character who speaks with a more SSB-aligned accent, engage in repeated verbal exchanges. Through acoustic analysis using Praat and Audacity, the research focuses on whether accommodation occurs between them at the segmental level, particularly in monophthong vowels, by measuring differences in vocal height (F1), vocal backness (F2), and additional phonological features (F3). The primary research problems addressed include identifying the types of phonetic accommodation that occur between Ray and Ken based on F1, F2, and other vowel characteristics; examining how accent differences between Irish English and SSB influence their accommodation patterns; and analyzing whether the patterns observed in *In Bruges* mirror those found in experimental phonetic studies.

The objectives are to document segmental accommodation in vowel usage, explore the influence of accent contrast on convergence or divergence, and contextualize these findings within broader phonetic accommodation literature. The scope of this study is grounded in sociophonetics, specifically Giles' Communication Accommodation Theory, and is limited to segmental features, monophthongs in utterances from the two main characters. Since the data is derived from a movie script, the analysis does not reflect spontaneous, unscripted speech, which limits its generalizability to natural conversations.

Additionally, this study does not assess listener perception, attitudes, or the social motivations behind accommodation; rather, it restricts its focus to measurable phonetic shifts. Nonetheless, the research offers theoretical contributions to the study of phonetics within sociolinguistics by illustrating how accent variation and accommodation manifest not only in experimental but also in cinematic contexts. It also provides a detailed acoustic description of segmental shifts based on formant values, thus enhancing our understanding of how accents reflect identity and cultural diversity. Practically, the study may benefit language learners, teachers, voice trainers, and media professionals by offering insight into the role of phonetic detail in communication, character authenticity, and linguistic awareness. The use of Praat and Audacity for vowel analysis also offers a replicable model for further studies involving acoustic phonetics, classroom learning, or even performance training, making this research relevant to both academic and applied contexts.

LITERATURE REVIEW

1. Previous Studies

Numerous studies have explored phonetic accommodation using experimental methods and quantitative acoustic analysis. Gessinger et al. (2021) conducted two studies in German: one in shadowing tasks with synthetic and natural speech, showing temporary vowel convergence; and another using a Wizard-of-Oz setup with a virtual tutor, where participants adapted pitch and articulation, though contrasts like [ɛ:] vs. [e:] remained resistant. Both studies, grounded in CAT and the Interactive Alignment Model (IAM), showed surface-level adaptation in controlled settings.

Tobin (2022) examined VOT accommodation in Korean and Spanish L1 speakers of English. Korean participants, whose L1 has less stable VOT, showed greater convergence in shadowing and reading tasks, highlighting the influence of L1 phonetic structure. Similarly, Ulbrich (2021) found that Spanish learners of German converged segmentally and suprasegmentally, with high-proficiency speakers showing more complete convergence in /r/ realization and pitch range, supporting CAT's emphasis on contextual and proficiency-based variation.

Tone-level accommodation was investigated by Lin et al. (2021), who found that Cantonese speakers could reverse a tone merger (Tone 3 and 6) through imitation, driven more by phonetic distance than social factors. In contrast, Ruch (2021) found no vowel convergence among Swiss German dialect speakers in a collaborative task. Using agent-based modeling, the study demonstrated that computational predictions did not always align with real interactions, possibly due to the absence of social variables.

Accommodation in L2 learning was explored by Piazza et al. (2023), who showed that Spanish learners of English exposed to Non-native Directed Speech improved production of contrastive vowels (/i/ vs. /ɪ/), though perception remained unaffected. Drawing on CAT and Hyper-Hypo (H&H) speech theory, the study emphasized hyperarticulation's role in production-based accommodation. Santos et al. (2021) focused on nasality, showing that participants reduced nasalance when exposed to high-nasal stimuli, but did not fully converge to low-nasal ones, highlighting asymmetrical divergence.

In naturalistic settings, Earnshaw (2021) found that Yorkshire speakers showed variation in the FACE vowel's F2 across dialect pairings during telephone conversations, with accommodation influenced by social identity and context. The study cautioned against relying solely on vowel formants for forensic comparison. Wagner et al. (2021)

investigated shadowing of non-native English accents by Dutch speakers, revealing convergence in vowel duration and speech rate even without social interaction, though heavily accented models led to less convergence, suggesting social perception plays a key role.

2. Phonetics

Phonetics is a subfield of linguistics that examines the physical properties of speech sounds. It is traditionally divided into three branches: articulatory phonetics (how sounds are produced by the vocal tract), acoustic phonetics (how sounds travel as waveforms), and auditory phonetics (how they are perceived by listeners) (Ladefoged & Johnson, 2015). This study specifically draws on acoustic phonetics to analyze measurable sound features such as frequency (formants), duration, and intensity.

In the context of phonetic accommodation, acoustic phonetics provides a scientific framework for capturing subtle pronunciation shifts between speakers, particularly across different accents. By using tools like Praat, researchers can identify and quantify these differences with high precision, especially in the segmental domain—focusing on vowels and consonants (Clark, Yallop, & Fletcher, 2007).

Vowels, in particular, play a central role in this analysis. They are produced without significant constriction in the vocal tract, allowing a relatively free airflow and typically involve voicing. The quality of a vowel is largely determined by the position of the tongue (height and backness) and lip rounding. These articulatory positions directly influence the formant values, especially the first (F1) and second (F2) formants, which indicate vowel height and backness, respectively.

3. Formant

In acoustic phonetics, vowel production is shaped not only by vocal fold vibration but also by the configuration of the vocal tract, particularly the oral cavity and pharynx. These cavities act as resonators that amplify certain frequency bands, producing distinct acoustic patterns called formants. Formants are labeled sequentially as F1, F2, F3, and so on, and they serve as crucial indicators of vowel quality (Peterson & Barney, 1952).

Formant analysis is central to studying phonetic accommodation, as it provides objective, quantifiable data to detect subtle shifts in articulation across speakers. The first formant (F1) reflects the vertical position of the tongue; the higher the tongue is during articulation, the lower the F1 frequency, and vice versa (Peterson & Barney, 1952; Stevens, 1998). The second formant (F2) indicates the frontness or backness of the tongue in the oral cavity. Although not as central as F1 and F2, the third formant (F3) can still provide supporting cues related to specific phonological features, such as rhoticity or individual speaker characteristics (Delattre, 1966).

4. Communication Accommodation Theory

Communication Accommodation Theory (CAT), first introduced by Giles (1973), explains how individuals modify their speech and communicative behavior in response to their interlocutor within a specific social context. This theory suggests that speakers tend to adjust their language, whether consciously or subconsciously, to either reduce or emphasize social distance. Such modifications can occur on various linguistic levels, including vocabulary, speech rate, intonation, syntactic structure, and pronunciation. Convergence is the act of adapting one's speech to resemble that of the interlocutor, often to signal solidarity, build rapport, or enhance mutual understanding. For instance, a

speaker may begin to mirror their conversation partner's intonation or adopt similar lexical choices. In contrast, divergence refers to the deliberate use of differing speech features to emphasize social or cultural identity, particularly in intercultural communication. A person may, for example, retain strong regional accent markers to assert individuality or group affiliation. These patterns of convergence and divergence are central to analyzing how speakers accommodate phonetically during interaction.

5. Phonetic Accommodation

Phonetic accommodation refers to the way speakers adjust their pronunciation during interaction, typically influenced by their interlocutor's speech. As a subset of Communication Accommodation Theory (CAT), it concentrates on segmental and suprasegmental features, such as vowel quality, consonant realization, pitch, speech rate, and intonation, where adjustments can be examined acoustically. While CAT outlines the motivations for convergence or divergence in speech, phonetic accommodation narrows this to the measurable phonetic level, using tools like Praat to track variations in formant frequencies, fundamental frequency (F0), and temporal features such as duration and rhythm.

Among the most documented patterns is vowel convergence. Low vowels like /æ/ and /ɑ/ are particularly susceptible to accommodation due to their articulatory flexibility and high acoustic salience (Babel, 2009), often showing greater variability in the first formant (F1). The extent and direction of such convergence can be influenced by a speaker's perception of social closeness with their partner, aligning with CAT's explanation of interactional motivations. Vowel duration is another key cue; speakers tend to lengthen or shorten vowels over time to match their interlocutor's timing patterns. Both formant shifts and vowel duration changes serve as reliable acoustic indicators of phonetic alignment at the segmental level.

Accommodation also extends to suprasegmental features. In a study on Spanish learners of German, pitch range (F0 excursion) and speech rate varied depending on the interlocutor's perceived nativeness and proficiency (Ulbrich, 2021). Higher-proficiency speakers exhibited more flexible accommodation, while less proficient ones maintained more rigid speech patterns. Interestingly, even native speakers slowed their articulation when speaking with less proficient partners, reinforcing CAT's dual premise that accommodation serves relational and functional goals, such as fostering solidarity and enhancing intelligibility.

Social evaluation also plays a vital role in phonetic accommodation. Speakers showed more convergence in vowel formants when their interlocutor was perceived as likable (Schweitzer & Lewandowski, 2014), and pitch convergence was strongly predicted by perceived attractiveness (Michalsky & Schoormann, 2017). Conversely, divergence in pitch accent occurred when negative attitudes were present. In a shadowing experiment, attractiveness effects on convergence emerged only among female participants (Babel et al., 2014). These findings emphasize that accommodation is not solely driven by linguistic input, but also by interpersonal dynamics and affective impressions.

Phonetic accommodation manifests through systematic phenomena such as shifts in vowel height and backness (F1 and F2), variation in duration, pitch modulation, and changes in speech rate. These are not random but are socially and cognitively mediated, shaped by how speakers perceive and respond to their conversational partners in real-time interaction.

METHOD

This study uses a qualitative approach. As Creswell (2014) notes, qualitative research enables a deeper analysis of meanings and patterns within specific contexts, especially in human interaction. It is appropriate for examining how and why linguistic phenomena like phonetic accommodation occur in conversations. Rather than generalizing statistically, the focus here is on describing shifts in pronunciation between the two main characters of the movie *In Bruges*, and how these reflect their sociolinguistic backgrounds.

The research design employed is qualitative descriptive. It focuses on analyzing phonetic accommodation as observed in interactions between Ray and Ken in *In Bruges* (2008). The analysis centers on vowel formants: vowel height (F1), backness (F2), and rhoticity (F3), to see whether their vowels shift toward one another. The natural tone of the film's dialogues makes it suitable for examining convergence or divergence in pronunciation. This design avoids manipulating variables and instead emphasizes direct observation. The utterances selected are those containing clearly articulated monophthongs, which are stable and suitable for acoustic analysis. Audio segments are isolated using Audacity and analyzed with Praat software. This method is based on Giles' Communication Accommodation Theory (1973) and supported by past studies linking vowel formants with articulatory convergence. The study investigates whether formant values grow more or less similar throughout the film, offering insights into how phonetic accommodation in fictional dialogue may mirror real-life interaction, particularly when the speakers come from distinct regional dialects.

This study uses two main instruments, Audacity and Praat. Audacity is used for trimming and organizing audio segments by removing background noise and non-speech elements. Praat, developed by Paul Boersma and David Weenink from the University of Amsterdam, is employed to analyze phonetic features such as duration, pitch, and formant frequencies (F1, F2, F3), which are relevant for examining phonetic accommodation. Together, these tools support accurate and efficient phonetic analysis.

The data are drawn from the 2008 film *In Bruges*, directed by Martin McDonagh. The movie presents multiple scenes of natural-sounding conversation between Ray and Ken, who represent different regional varieties: Irish English and British English. These scenes provide potential material for studying phonetic accommodation. Utterances containing monophthong vowels are selected and used as the data for analysis in Praat.

Data collection involves the following steps:

1. Watch and review *In Bruges* (2008) to identify scenes with Ray and Ken conversing.
2. Select utterances where both characters produce monophthong vowels.
3. Record high-quality audio of selected utterances.
4. Import audio into Audacity to remove silences, background noise, and segment utterances by speaker.
5. Screen segments to ensure clarity, excluding music, overlaps, or distorted parts.
6. Label each segment using codes (e.g., R1-D1 or K2-C2), indicating speaker (Ray or Ken), token order, and whether the instance is categorized as Divergence (D) or Convergence (C).
7. Export segmented utterances as WAV files for analysis in Praat.
8. Open each file in Praat to extract formant frequencies: F1, F2, and F3.
9. Compile formant values into a structured table categorized by speaker and vowel type

The data analysis procedure includes:

1. Analyzed monophthong vowels (/i:/, /u:/, /ɜ:/) using Praat to examine F1 (height), F2 (backness), and F3 (rhoticity), comparing Ray and Ken's utterances to detect convergence or divergence.
2. Investigated how Ray's Irish English and Ken's British English backgrounds influenced their phonetic accommodation across scenes.
3. Considered Bruges as an unfamiliar environment and examined how this foreign setting affected their speech adjustment and social dynamics.
4. The results were examined to show how vowel shifts related to the characters' identity, emotional closeness, or distance during conversations in the film.

RESULT AND DISCUSSION

1. Result

Based on the table below, there are 23 utterances in Ray's speech that show signs of phonetic accommodation. Among these, only 3 instances demonstrate convergence, while the remaining 20 are categorized as divergence. Meanwhile, Ken exhibits a total of 27 phonetic accommodation utterances, with 4 phenomena of convergence and 23 phenomena of divergence. Compared to the results of previous studies, the present findings in this study show a greater tendency toward divergence rather than convergence. While most previous studies, such as those by Gessinger et al. (2021), Ulbrich (2021), and Wagner et al. (2021), observed consistent convergence in experimental settings, this study shows the opposite results in a movie context.

Table 1. Phonetic Accommodation in Two Main Characters in In Bruges

No	Phonetic Accommodation	Characters	
		Ray	Ken
1.	Convergence	3	3
2.	Divergence	20	24
	Total	23	27

Interestingly, the high number of divergence phenomena aligns more closely with Ruch (2021) and Santos et al. (2021) findings, where either no convergence occurred or divergence appeared in response to perceptually marked features. These results suggest

that divergence, rather than being a lack of accommodation, may function as a meaningful sociolinguistic strategy depending on the interactional context.

2. Discussion

The following section provides a detailed explanation of the utterances that show phonetic accommodation:

A. Ray Convergence

1) R1-C1: “What? On a job?”

When Ray repeats the utterance job, previously uttered by Ken, acoustic analysis using Praat shows that Ken’s realization of the vowel /ɒ/ has an F1 at 650 Hz and F2 at 1341 Hz, which is noticeably above the average formant values of Standard Southern British (SSB) English for /ɒ/ (F1 \approx 558 Hz and F2 \approx 1047 Hz). The higher F1 values in both Ken’s and Ray’s productions may result from vowel undershoot, a common phenomenon in connected speech where articulatory targets are not fully achieved due to temporal constraints. In this context, the vowel is acoustically compressed between the voiced affricate /dʒ/ and the voiced bilabial stop [b], which both reduce articulatory time and vowel space, leading to a more open articulation (reflected in the higher F1). The higher F2 values may indicate a shift toward a more centralized vowel position, possibly due to connected speech effects or individual articulatory habits that cause deviation from the typical SSB articulation. Ray’s repetition yields an F1 of 639 Hz and an F2 of 1307 Hz. Although there are slight differences in their formant values, the two speakers’ productions show relatively close acoustic values. This suggests that Ray is accommodating Ken’s pronunciation by adjusting his articulation to move closer to Ken’s formant values, rather than exactly matching the SSB norm. This indicates a phenomenon of phonetic convergence, where one speaker modifies their articulation to resemble another’s within the natural range of coarticulatory variation.

2) R2-C2: “And anyway, if you tried to help her carry her shopping...”

In the scene where Ray repeats the utterance help after Ken, the focus is on the vowel /e/. Ken produces help with an F1 of 563 Hz and an F2 of 1415 Hz. Compared to the average formant values of Standard Southern British (SSB) English for /e/ (F1 \approx 494 Hz, F2 \approx 1650 Hz), Ken’s F1 is higher than the SSB average, indicating a more open vowel articulation, while his F2 is notably lower, which may suggest a retracted or centralized tongue position. Ray, in his repetition, produces an F1 of 574 Hz and an F2 of 1484 Hz. His F1 is also above the SSB norm, and although his F2 remains lower than expected, it is slightly higher than Ken’s, indicating a subtle acoustic shift toward Ken’s articulation. These deviations from SSB norms show that both speakers produced the vowel with more openness and a somewhat centralized tongue position compared to the typical fronted /e/ in SSB. The raised F1 values reflect a lowered tongue height, while the reduced F2 values imply tongue retraction, pulling the vowel away from its usual position in the front vowel space. Despite these differences, the relative similarity in their formant values suggests that Ray accommodated Ken’s articulation. Ken’s pronunciation, likely shaped by emotional context and his attempt to speak clearly during a serious conversation, may have involved more deliberate articulation. Ray, responding to Ken’s tone and vowel shape, appears to adjust his pronunciation, not identically, but closely enough to show convergence. This suggests that phonetic convergence can take the form of subtle articulatory shifts that reduce the distance between speakers’ vowel productions.

B. Ken Convergence

1) K1-C1: "Except 'hmm' what?"

In a scene where Ken repeats the utterance except after Ray, both Ray and Ken exhibit notable similarities in the articulation of the vowel /e/. Acoustically, Ray's pronunciation shows an F1 of 496 Hz and F2 of 1568 Hz, while Ken's is slightly higher in F1 at 509 Hz and somewhat lower in F2 at 1527 Hz. These values indicate that both speakers produced a relatively fronted and mid-open vowel. When heard in context, their realizations of the vowel /e/ in except are highly similar, supporting the classification of convergence in this utterance. According to the average formant values of Standard Southern British (SSB) English, the vowel /e/ typically shows an F1 of 494 Hz and an F2 of 1650 Hz. Compared to this standard, Ken's F2 is notably lower, which may be attributed to his accommodation toward Ray's Irish English pronunciation. Rather than maintaining a fully fronted vowel as expected in SSB, Ken appears to slightly retract the tongue, aligning his articulation more closely with Ray's. Interestingly, while convergence occurs in the /e/ segment, the preceding unstressed vowel /ɪ/ reveals divergence: Ken articulates the full form [ɪk'sept], while Ray produces a more reduced version [k'sept], a trait commonly found in Irish English. Nevertheless, as the analysis in this study centers on the segmental vowel /e/, and the formant values of both speakers are acoustically close, this utterance is categorized as phonetic convergence

2) K2-C2: "He was a lollipop man."

In this scene, Ken repeats the utterance man after Ray. Ray pronounces the vowel with an F1 at 576 Hz and F2 at 1390 Hz, resembling an /a:/ vowel rather than the typical /æ/, likely influenced by his Irish English accent, which tends to involve more open and retracted vowel realizations. Ken then produces the same vowel with F1 at 622 Hz and F2 at 1303 Hz. Both sets of values are considerably lower than the average formant values of Standard Southern British (SSB) English for /æ/ (F1 \approx 690 Hz and F2 \approx 1550 Hz), particularly in terms of F2. These lowered formant values suggest that neither speaker is targeting the SSB norm, and instead, both realize the vowel with a retracted tongue position and greater openness. Phonetically, the reduced F2 values are indicative of tongue backing during articulation, consistent with vowel realizations in Irish English and certain regional British accents. Ken's production, while not an exact match to Ray's, noticeably shifts in the direction of Ray's formant values. This narrowing of the acoustic distance between their vowel productions demonstrates a phenomenon of phonetic convergence. Although Ken maintains some features of his native accent, his articulation of man appears to accommodate Ray's pronunciation to a degree. This subtle adjustment reflects an alignment in speech that may support smoother interaction between the two characters, especially given the emotional context of their conversation.

C. Ray Divergence

1) R1-D1: "You're a bunch of fucking elephants!"

In a moment of overt irritation, Ray responds to a tourist by saying, "You're a bunch of fucking elephants!" This outburst follows the tourist's misunderstanding of Ray's indirect warning about the fragility of a narrow staircase at a local site. The tourists' lack of understanding prompted a surge of frustration that led to Ray using the expletive "fuck" as part of an emotionally charged insult. Acoustic analysis of the vowel /ʌ/ in fuck, as produced by Ray, reveals an F1 of 577 Hz and an F2 of 952 Hz. Compared to the average

formant values of Standard Southern British (SSB) English for /ʌ/ ($F1 \approx 644$ Hz, $F2 \approx 1259$ Hz), Ray's vowel demonstrates both a lower F1 and F2. The lower F1 suggests a slightly more closed vowel articulation, while the reduced F2 indicates a retracted tongue position. These deviations may reflect features of Ray's Irish English accent, where /ʌ/ is often produced further back in the oral cavity than in SSB. Additionally, the emotionally heightened nature of the utterance may have contributed to the articulatory tension, causing a more centralized or retracted realization of the vowel. The divergence in both F1 and F2 values can thus be interpreted as a reflection of both regional phonetic identity and the speaker's emotional stance, reinforcing a distance toward the tourist family.

2) R2-D2: "Fuck off, are we!" During a tense disagreement between Ray and Ken, Ray abruptly dismisses Ken's attempt to reason with him by saying "fuck off are we," marking a clear instance of phonetic divergence. Acoustic analysis of the vowel /ʌ/ in fuck, as produced by Ray, shows an F1 of 574 Hz and an F2 of 1033 Hz. When compared to the average formant values of Standard Southern British (SSB) English for /ʌ/ ($F1 \approx 644$ Hz, $F2 \approx 1259$ Hz), Ray's vowel features both a lower F1 and a noticeably lower F2. These values indicate a more closed and retracted vowel articulation. The lower F2 in particular suggests a tongue position further back in the oral cavity, which may be characteristic of Ray's Irish English background. Additionally, his emotional state, marked by frustration and rejection, could contribute to this retracted articulation. Emotional tension often influences vowel production by increasing vocal strain or compacting articulatory gestures. In this case, Ray's vowel deviates from the SSB norm and contrasts with Ken's calmer, more neutral delivery. Rather than aligning with Ken phonetically, Ray's articulation reflects interpersonal disalignment, with the lower F1 and F2 values serving as acoustic cues of distance.

D. Ken Divergence

1) K1-D1: "Harry can get guns anywhere."

In a moment of dialogue centered on the topic of weapon availability, Ray says, "But we haven't got any guns," which is immediately followed by Ken's response, "Harry can get guns anywhere." The acoustic analysis reveals an instance of divergence. The utterance guns, as uttered by Ray, show an F1 of 742 Hz and an F2 of 2359 Hz. These values reflect a notably fronted and open articulation of the vowel /ʌ/, which deviates from both the average formant values of Standard Southern British (SSB) English ($F1 \approx 644$ Hz, $F2 \approx 1259$ Hz) and the more central-back vowel quality typically found in Irish English. Ray's vowel is unusually fronted, indicated by the high F2 value, possibly influenced by the speech context or emotional tone. In contrast, Ken produces guns with an F1 of 772 Hz and an F2 of 1740 Hz. Although his F1 is relatively close to Ray's, suggesting a similar degree of vowel openness, the F2 is considerably lower than Ray's, indicating a less fronted articulation. Ken's production also deviates from the SSB average, especially in F1, but rather than fully aligning with Ray's realization, he maintains a differently positioned tongue. Despite a slight alignment in F1, the large gap in F2 reflects a clear acoustic divergence. Therefore, this utterance is best categorized as phonetic divergence, as the vowel remains different between speakers, particularly in terms of tongue fronting.

2) K2-D2: "Yes, he is a bit of a cock."

In one particular scene, Marie, the hotel owner, who speaks with a Belgian accent, refers to Ken's boss using the utterance *cock*, a vulgar term in English that is typically used to insult or belittle someone. When Ken repeats the word, he does so with clear hesitation and a noticeably softened tone, suggesting he feels uneasy using such a harsh expression, especially since it's aimed at someone he respects. This unease is not only in his intonation and facial expression, but also in how he articulates the vowel in *cock*. According to the average formant values of SSB, the vowel /ɒ/ in *cock* typically has an $F1 \approx 558$ Hz and an $F2 \approx 1047$ Hz. In Marie's pronunciation, the vowel shows an $F1$ of 791 Hz and an $F2$ of 1257 Hz. These values are higher than the standard and may be influenced by his native Belgian accent, which could affect how far back the tongue is placed or how rounded the lips are. When Ken repeats the word, his $F1$ reaches 853 Hz and $F2$ rises to 1473 Hz, both noticeably higher than average and higher than the hotel owner's. This shift suggests that Ken produced the vowel with a more open mouth (higher $F1$) and a more fronted tongue position (higher $F2$), possibly because of the slower and more careful way he said it. This kind of articulation often happens in hesitant or emotionally cautious speech. When someone isn't fully comfortable with what they're saying, their vowel articulation tends to shift, sometimes becoming more central, less rounded, or less forceful. Even though Ken repeats Marie's utterance, the acoustic gap between their vowel productions, especially in $F2$, shows that Ken is not fully aligning with him. This subtle distance in how the word is said supports the idea that Ken is diverging slightly, using speech to express his discomfort and to soften the impact of the insult.

CONCLUSION/KESIMPULAN

Based on 50 utterances, Ray produced 23 cases of phonetic accommodation, 3 convergences and 20 divergences, while Ken produced 27, with 3 convergences and 24 divergences. This shows that both characters tend to retain their original vowel features rather than adapt to each other's speech. The divergence was identified through formant analysis: $F1$ for vowel height, $F2$ for backness, and $F3$ for rhoticity. Convergence, when present, was partial and rare.

Ray's speech strongly reflects Irish English characteristics, especially in back vowels like /ʌ/ and /ɒ/, while Ken's pronunciation leans toward British English, though not fully aligned with Standard Southern British norms. These accent-specific features create a phonological boundary that affects how accommodation occurs.

Despite moments of emotional closeness, both characters generally maintain their accent features. This suggests that regional identity plays a key role in shaping their phonetic behavior. The consistent divergence, even in neutral or friendly interactions, reflects real-life tendencies where people may not always adjust their speech to match others, especially when identity, emotion, or social position are at stake.

In *In Bruges*, convergence typically appears when interactions are emotionally neutral or open, while divergence is more frequent during tension or uncertainty, not as a sign of conflict alone, but as a way to preserve individual identity within the interaction.

REFERENCES

Babel, M. (2009). Phonetic and social selectivity in speech accommodation. *University of California Berkeley Working Papers in Linguistics*, 35, 1–23.

Babel, M., McGuire, G., & King, J. (2014). Towards a more nuanced view of vocal attractiveness. *PLoS one*, 9(2), e88616. <https://doi.org/10.1371/journal.pone.0088616>

Clark, J., Yallop, C., & Fletcher, J. (2007). *An introduction to phonetics and phonology* (3rd ed.). Wiley-Blackwell.

Coupland, N., & Bishop, H. (2007). Ideologised values for British accents. *Journal of Sociolinguistics*, 11(1), 74–93. <https://doi.org/10.1111/j.1467-9841.2007.00311.x>

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.

Delattre, P. (1966). *Studies in French and Comparative Phonetics*. Mouton.

Earnshaw, K. (2021). Examining the implications of speech accommodation for forensic speaker comparison casework: A case study of the West Yorkshire FACE vowel. *Journal of Phonetics*, 87. <https://doi.org/10.1016/j.wocn.2021.101062>

Flege, J. E. (1995). Second language speech learning: Theory, findings and problems. In W. Strange (Ed.), *Speech perception and linguistic experience: Issues in cross-language research* (pp. 233–277). Baltimore: York Press.

Foulkes, P., & Docherty, G. (2006). The social life of phonetics and phonology. *Journal of Phonetics*, 34(4), 409–438. <https://doi.org/10.1016/j.wocn.2005.08.002>

Gessinger, I., et al. (2021). Phonetic accommodation in interaction with a virtual language learning tutor: A Wizard-of-Oz study. *Journal of Phonetics*, 86. <https://doi.org/10.1016/j.wocn.2021.101029>

Gessinger, I., et al. (2021). Phonetic accommodation to natural and synthetic voices: Behavior of groups and individuals in speech shadowing. *Speech Communication*, 130, 36–47. <https://doi.org/10.1016/j.specom.2020.12.004>

Giles, H. (1973). Accent mobility: A model and some data. *Anthropological Linguistics*, 15(2), 87–105.

Giles, H., & Powesland, P. F. (1975). *Speech style and social evaluation*. New York: Academic Press.

Hickey, R. (2007). *Irish English: History and present-day forms*. Cambridge University Press.

Kachru, B. B. (1985). Standards, codification and sociolinguistic realism: The English language in the Outer Circle. In R. Quirk & H. G. Widdowson (Eds.), *English in the world: Teaching and learning the language and literatures* (pp. 11–30). Cambridge University Press.

Kachru, B. B. (1992). *The other tongue: English across cultures* (2nd ed.). University of Illinois Press.

Knight, R. A. (2012). *Phonetics: A coursebook*. Cambridge University Press.

Ladefoged, P., & Johnson, K. (2015). *A course in phonetics* (7th ed.). Cengage Learning.

Lin, Y., Yao, Y., & Luo, J. (2021). Phonetic accommodation of tone: Reversing a tone merger-in-progress via imitation. *Journal of Phonetics*, 87. <https://doi.org/10.1016/j.wocn.2021.101060>

Michalsky, J., Schoormann, H. (2017). Pitch Convergence as an Effect of Perceived Attractiveness and Likability. *Proc. Interspeech 2017*, 2253-2256, doi: 10.21437/Interspeech.2017-1520

Pardo J. S. (2006). On phonetic convergence during conversational interaction. *The Journal of the Acoustical Society of America*, 119(4), 2382–2393. <https://doi.org/10.1121/1.2178720>

Peterson, G. E., & Barney, H. L. (1952). Control methods used in a study of the vowels. *Journal of the Acoustical Society of America*, 24, 175–184. <https://doi.org/10.1121/1.1906875>

Piazza, G., Kalashnikova, M., & Martin, C. D. (2023). Phonetic accommodation in non-native directed speech supports L2 word learning and pronunciation. *Scientific Reports*, 13(1). <https://doi.org/10.1038/s41598-023-48648-7>

Roach, P. (2009). *English phonetics and phonology: A practical course* (4th ed.). Cambridge University Press.

Ruch, H. (2021). Dialect contact in real interactions and in an agent-based model. *Speech Communication*, 134, 55–70. <https://doi.org/10.1016/j.specom.2021.09.003>

Santos, T. D. dos, Pardo, J. S., & Bressmann, T. (2021). Interlocutor accommodation of gradually altered nasal signal levels in a model speaker. *Phonetica*, 78(1), 95–112. <https://doi.org/10.1515/phon-2019-0105>

Schweitzer, A., & Lewandowski, N. (2014). Social factors in convergence of F1 and F2 in spontaneous speech. In *Proceedings of the 10th International Seminar on Speech Production* (pp. 61–64).

Stevens, K. N. (1998). *Acoustic phonetics*. MIT Press.

Tobin, S. J. (2022). Effects of native language and habituation in phonetic accommodation. *Journal of Phonetics*, 93. <https://doi.org/10.1016/j.wocn.2022.101148>

Trudgill, P. (2000). *Sociolinguistics: An introduction to language and society* (4th ed.). Penguin Books.

Ulbrich, C. (2024). Phonetic Accommodation on the Segmental and the Suprasegmental Level of Speech in Native–Non-Native Collaborative Tasks. *Language and Speech*, 67(2), 346–372. <https://doi.org/10.1177/00238309211050094>

Wagner, M. A., Broersma, M., McQueen, J. M., Dhaene, S., & Lemhöfer, K. (2021). Phonetic convergence to non-native speech: Acoustic and perceptual evidence. *Journal of Phonetics*, 88. <https://doi.org/10.1016/j.wocn.2021.101076>

Wells, J. C. (2008). *Longman pronunciation dictionary* (3rd ed.). Pearson Education.