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APPENDIX

1. Ray Convergence

Code	Utterance	Vowel	F1 (Hz)		F2 (Hz)		F3 (Hz)		Interpretation
			Std	measured	std	measured	std	measured	
R1-C1	“What? On a <u>job</u> ?”	/ɒ/	558	639	1047	1307	-	-	Ray repeats the utterance <i>job</i> after Ken, both produce the vowel /ɒ/ with formant values slightly below the average formant values of the Standard Southern British (SSB) English for /ɒ/ (F1 ≈ 558 Hz and F2 ≈ 1047 Hz). Ken’s is at 650 Hz (F1) and 1341 Hz (F2), likely due to vowel undershoot caused by surrounding consonants, and Ray’s is at 639 Hz (F1) and 1307 Hz (F2). The small distance between their values suggests Ray accommodated Ken’s pronunciation.
R2-C2	“And anyway, if you tried to <u>help</u> her carry her shopping...”	/e/	494	574	1650	1484	-	-	In the scene where Ray repeats the utterance <i>help</i> after Ken, both produce the vowel /e/ with F1 values within the average formant values of Standard Southern British (SSB) for /e/ (F1 ≈ 494 Hz and F2 ≈ 1650 Hz), but with noticeably lower F2 values, Ken’s at 1415 Hz and Ray’s at 1484 Hz, indicating vowel backing or centralization; this suggests a subtle convergence, as Ray’s articulation shifts closer to Ken’s, possibly influenced by accent and intentional clarity.
R3-C3	“I know I didn’t <u>mean</u> to.”	/i:/	280	387	2249	2014	-	-	In the scene where Ray repeats the utterance <i>mean</i> , which Ken previously spoke, Ken produces the vowel /i:/ with an F1 of 394 Hz and an F2 of 2009 Hz. Ray’s repetition shows very similar values, with an F1 of 387 Hz and an F2 of 2014 Hz. The close distance between the two sets of formant values indicates a clear attempt at phonetic alignment. When compared to the average formant values for /i:/ in Standard Southern British (SSB) English, F1 ≈ 280 Hz and F2 ≈ 2249 Hz, both speakers show a noticeably higher F1 and lower F2. The higher F1 suggests a slightly more open articulation, while the lower F2 indicates that the tongue is positioned further back than in the standard SSB articulation of /i:/. These shifts may reflect regional accent influence, particularly from Irish English in Ray’s case, and the natural variation that can occur in casual speech. Nevertheless, the acoustic similarity between their productions, despite deviating from the SSB norm, strongly suggests phonetic convergence.

2. Ken Convergence

Code	Utterance	Vowel	F1 (Hz)		F2 (Hz)		F3 (Hz)		Interpretation
			std	measured	std	measured	std	measured	
K1-C1	“ <u>Except</u> ‘hmm’ what?”	/e/	494	509	1650	1527	-	-	In the scene where Ken repeats the word <i>except</i> after Ray, both speakers show notable similarity in the articulation of the vowel /e/, with Ray producing F1 = 496 Hz and F2 = 1568 Hz, and Ken producing F1 = 509 Hz and F2 = 1527 Hz. These values reflect a relatively fronted and mid-open vowel, with a small acoustic distance indicating phonetic convergence. Although both deviate from the Standard Southern British (SSB) average (F1 $\approx$ 494 Hz, F2 $\approx$ 1650 Hz), Ken’s slightly lower F2 suggests a subtle adjustment toward Ray’s Irish English articulation. While divergence appears in the preceding unstressed vowel /ɪ/, where Ken uses [ɪk’sɛpt] and Ray reduces it to [k’sɛpt], this analysis focuses solely on the segmental realization of /e/, which supports the categorization of this utterance as convergence.
K2-C2	“He was a lollipop <u>man</u> .”	/æ/	690	622	1550	1303	-	-	In this scene, Ken repeats the utterance <i>man</i> after Ray. Ray pronounces the vowel with F1 at 576 Hz and F2 at 1390 Hz, resembling /ɑ:/ more than the typical /æ/, likely due to his Irish English accent, which favors more open and retracted vowels. Ken then produces it with F1 at 622 Hz and F2 at 1303 Hz. Compared to the Standard Southern British (SSB) average for /æ/ (F1 $\approx$ 690 Hz, F2 $\approx$ 1550 Hz), both speakers show noticeably lower values, especially in F2, indicating tongue

									backing and a deviation from SSB norms. While Ken's articulation does not exactly match Ray's, his vowel shifts closer to Ray's realization, showing a narrowed acoustic distance that suggests phonetic convergence. This adjustment may reflect Ken's subtle alignment with Ray's speech in the emotionally tense context of their conversation.
K3-C3	"You've the <u>capacity</u> to get fucking worse!"	/æ/	690	799	1550	1407	-	-	In the scene where Ken repeats the utterance <i>capacity</i>, which was previously spoken by Harry, both speakers produce the vowel /æ/ with formant values that are close to each other. Harry's articulation shows an F1 of 759 Hz and F2 of 1492 Hz, while Ken's production yields an F1 of 799 Hz and F2 of 1407 Hz. Although these values deviate from the average formant values of Standard Southern British (SSB) English for /æ/ (F1 $\approx$ 690 Hz, F2 $\approx$ 1550 Hz), particularly with both speakers producing a more open (higher F1) and more retracted (lower F2) vowel, the acoustic similarity between Ken's and Harry's vowels suggests that Ken adjusted his articulation to align with Harry's. This indicates a phenomenon of phonetic convergence, where Ken approximates Harry's vowel quality despite both deviating from the SSB standard.

1. Ray Divergence

Code	Utterance	Vowel	F1 (Hz)		F2 (Hz)		F3 (Hz)		Interpretation
			Std	measured	std	measured	std	measured	
R1- D1	“You’re a bunch of <u> fucking </u> elephant!”	/ʌ/	644	577	1259	952	-	-	In a moment of overt irritation, Ray responds to a tourist by saying, “You’re a bunch of fucking elephants!” following the tourist’s failure to grasp Ray’s indirect warning about the fragility of a narrow staircase. This misunderstanding triggers Ray’s frustration, leading him to use the expletive “fuck” in an emotionally intense outburst. Acoustic analysis of the vowel /ʌ/ in <i>fuck</i> shows that Ray produces it with an F1 of 577 Hz and an F2 of 952 Hz, both of which are lower than the average formant values of Standard Southern British (SSB) English (F1 ≈ 644 Hz, F2 ≈ 1259 Hz). The lower F1 suggests a slightly more closed vowel, while the reduced F2 points to a more retracted tongue position. These deviations may reflect characteristic features of Irish English, where /ʌ/ tends to be produced further back in the mouth, and could also be influenced by emotional tension during speech. The divergence from SSB norms in both formants reflects not only Ray’s regional accent but also his emotional detachment and rejection of the tourist family in that moment.
R2- D2	“ <u> Fuck </u> off, are we!”	/ʌ/	644	574	1259	1033	-	-	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 phenomenon of phonetic divergence. Acoustic analysis of the vowel /ʌ/ in <i>fuck</i>, as

									produced by Ray, reveals an F1 of 574 Hz and an F2 of 1033 Hz, both of which are lower than the average formant values of Standard Southern British (SSB) English (F1 $\approx$ 644 Hz, F2 $\approx$ 1259 Hz). These values indicate a more closed and retracted vowel articulation, with the notably low F2 suggesting a tongue position further back in the mouth, likely influenced by Ray's Irish English background. His emotional state, marked by visible frustration, may also contribute to this articulatory shift, as tension can lead to tighter and more retracted gestures. Rather than accommodating Ken's speech, Ray's vowel production underscores their interpersonal distance.
R3-D3	“Not out of anger. Not out of nothing. For <u>money</u>.”	/ʌ/	644	534	1259	1350	-	-	In one of the scenes, Ray repeats the word <i>money</i>, which was first uttered by the priest moments before Ray ends the priest's life. The phonetic focus lies on the first syllable, particularly the vowel /ʌ/ in <i>mon-</i>. The priest produces this vowel with an F1 of 609 Hz and an F2 of 1365 Hz, which already deviates slightly from the average formant values of Standard Southern British (SSB) English for /ʌ/ (F1 $\approx$ 644 Hz, F2 $\approx$ 1259 Hz). In contrast, Ray's pronunciation shows greater deviation, with a noticeably lower F1 of 534 Hz and an F2 of 1350 Hz. The lower F1 indicates a higher tongue position, resulting in a less open vowel, while the F2, although close to the priest's, still sits outside the expected SSB range. This realization is consistent with Ray's Irish English accent, where the /ʌ/ vowel is often absent and frequently replaced by a more backed or rounded vowel, such as

									/ʊ/ or a centralized /o/. Thus, despite some similarity in F2, the overall difference in vowel quality, especially in height and rounding, marks this as a phenomenon of phonetic divergence.
R4-D4	“We are doing the things that you <u>wanted</u> tonight.”	/ʊ/	558	608	1047	1222	-	-	In this scene, Ken whispers the word <i>wanted</i> , and Ray repeats it shortly after. Ken’s production of the vowel /ʊ/ shows an F1 of 627 Hz and an F2 of 1403 Hz, both of which are noticeably higher than the average formant values of Standard Southern British (SSB) English for /ʊ/ (F1 ≈ 558 Hz, F2 ≈ 1047 Hz). This elevation is likely influenced by the whispering context, since whispering lacks vocal fold vibration, articulatory precision often decreases. The tongue may shift slightly forward, and lip rounding may be reduced, which can raise both F1 and F2. When Ray repeats the word, his F1 is 608 Hz, fairly close to Ken’s, but his F2 drops to 1222 Hz, showing a more backed articulation. While Ray may be approximating Ken’s vowel openness, the notable difference in F2 suggests that the tongue position remains further back in his articulation. Because of this gap, especially in the frontness dimension, the two realizations diverge acoustically. Thus, this exchange is best categorized as phonetic divergence rather than convergence.

R5-D5	“What’s a <u>lollipop</u> man doing knowing fucking karate?”	/ɒ/	558	1047	1551	-	-	In a subsequent scene, Ray repeats the word <i>lollipop</i> after Ken, focusing on the vowel /ɒ/. Ken produces this vowel with an F1 of 630 Hz and an F2 of 1414 Hz, both higher than the average Standard Southern British (SSB) values (F1 ≈ 558 Hz, F2 ≈ 1047 Hz), indicating a more open and fronted articulation. Ray, who had previously realized /ɒ/ with F1 = 664 Hz and F2 = 1208 Hz, adjusts his articulation slightly in this scene, lowering his F1 to 658 Hz and raising his F2 significantly to 1551 Hz. Although the F1 values suggest similar vowel openness between the two speakers, the substantial difference in F2 indicates a divergence in tongue fronting. Despite Ray’s movement toward a more fronted vowel, the acoustic gap remains too large for this to be categorized as convergence. Therefore, this utterance is more accurately categorized as phonetic divergence.	
R6-D6	“No, not a <u>shop</u> lifter.”	/ɒ/	558	626	1047	1360	-	-	When Ray repeats the utterance <i>shoplifter</i> after Chloe, the formant values show divergence. Chloe’s /ɒ/ in <i>shop</i> has F1 = 834 Hz and F2 = 1445 Hz, while Ray’s is lower at F1 = 626 Hz and F2 = 1360 Hz. The consistent acoustic gap confirms this as a phenomenon of phonetic divergence.
R7-D7	“No, not a shop <u>lifter</u> .”	/ɪ/	367	483	1757	1543	-	-	When Ray repeats the utterance <i>shoplifter</i> after Chloe, the formant values show divergence. For /ɪ/ in <i>lifter</i> , Chloe’s F1 = 465 Hz and F2 = 1582 Hz; Ray produces it with F1 = 483 Hz and F2 = 1543 Hz. Although Ray drops the final <i>-er</i> , aligning with Chloe’s non-rhotic style, the vowel quality itself does not

converge. The consistent acoustic gap confirms this as a phenomenon of phonetic divergence.

R8-D8	“What’s a fifty-year-old lollipop man doing knowing fucking karate?”	/ɪ/	367	354	1757	1512	-	-	In the scene where Ray repeats the utterance <i>fifty</i> after Ken, both speakers show notable differences in their production of the /ɪ/ vowel. Ken’s formant values are F1 = 398 Hz and F2 = 1849 Hz, while Ray produces F1 = 354 Hz and F2 = 1512 Hz. Compared to the average SSB formant values for /ɪ/ (F1 ≈ 367 Hz, F2 ≈ 1757 Hz), Ken’s F1 and F2 are slightly higher, suggesting a more open and fronted articulation than the SSB norm. In contrast, Ray’s F1 is lower, suggesting a slightly higher tongue position, and his F2 is considerably lower than the SSB norm, pointing to a more retracted articulation. Although their F1 values are relatively close, the noticeable gap in F2 indicates that Ray’s vowel is produced further back in the mouth than Ken’s. This acoustic disparity, especially in F2, reflects a lack of phonetic convergence between the two speakers, and thus, the utterance is best categorized as phonetic divergence.
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R9-D9	“You <u>do</u> , actually.”	/u:/	316	441	1191	1421	-	-	In the scene where Ray repeats the utterance <i>do</i> after being questioned by Chloe, their vowel realizations of /u:/ highlight articulatory differences. Chloe, who speaks with a Belgian accent, produces the vowel with F1 = 439 Hz and F2 = 1677 Hz, while Ray’s production shows F1 = 441 Hz and F2 = 1421 Hz. Compared to the average formant values of Standard Southern British (SSB) English for /u:/ (F1 ≈ 316 Hz, F2 ≈ 1191 Hz), both speakers show elevated F1 and F2 values, indicating a more open and fronted articulation. While Ray’s F1 closely matches Chloe’s, suggesting a similar degree of tongue height (openness), the substantial difference in F2 reflects a difference in tongue fronting, Chloe’s vowel being more fronted, likely due to L1 transfer. Despite the similarity in F1, the large gap in F2 values suggests that Ray does not fully align with Chloe’s articulation. Therefore, this utterance is better categorized as a phenomenon of phonetic divergence.
R10-D10	“A <u>horse</u> tranquilizer?”	/ɔ:/	415	601	828	1163	-	-	In the scene where Ray repeats the utterance <i>horse</i> after Chloe, their realizations of the /ɔ:/ vowel reveal clear acoustic divergence. Chloe, speaking with a Belgian accent, produces the vowel with an F1 of 642 Hz and an F2 of 2270 Hz, showing a much more open and fronted articulation than what is typical in Standard Southern British (SSB) English, where /ɔ:/ averages around F1 = 415 Hz and F2 = 828 Hz. Ray, on the other hand, produces the same vowel with an F1 of 601 Hz and an F2 of 1163 Hz. While Ray’s F1 is somewhat close to

									Chloe's, indicating a similar degree of openness, the stark contrast in F2, particularly Ray's much lower value, reflects a significantly more backed articulation. This gap in tongue advancement shows that Ray does not mirror Chloe's production, and thus, the exchange is better categorized as phonetic divergence.
R11-D11	"What's <u>fucking</u> unbelievable?"	/ʌ/	644	501	1259	1095	-	-	In the scene where Ray repeats the utterance <i>fucking</i> after it is first said by a restaurant guest, the two speakers' realizations of the /ʌ/ vowel differ acoustically. The guest produces /ʌ/ with an F1 of 650 Hz and an F2 of 1162 Hz, while Ray's production shows an F1 of 501 Hz and an F2 of 1095 Hz. Compared to the average formant values for /ʌ/ in Standard Southern British (SSB) English (F1 ≈ 644 Hz, F2 ≈ 1259 Hz), both speakers deviate, though in different ways. The guest's values are relatively close to the SSB norm, particularly in F1, whereas Ray's vowel is less open (lower F1) and more retracted (lower F2), indicating a more closed and backed articulation. Although their F2 values are not drastically different, the substantial gap in F1 suggests that Ray's vowel lacks the same degree of openness, leading to an overall pattern of phonetic divergence.
R12-D12	"What's <u>fucking</u> <u>unbelievable</u> ?"	/i:/	280	463	2249	1747	-	-	In the same scene, after Ray repeats the utterance <i>fucking</i> , he also repeats the word <i>unbelievable</i> , which was previously spoken by a restaurant guest. The guest produces the vowel /i:/ with an F1 of 443 Hz and an F2 of 1588 Hz, while Ray produces it with an F1 of 463 Hz and an F2 of 1747 Hz. Both speakers deviate from the average formant values

									of Standard Southern British (SSB) English for /i:/ (F1 $\approx$ 280 Hz, F2 $\approx$ 2249 Hz), particularly in having higher F1 values, which indicates a more open articulation, and lower F2 values, suggesting a more retracted tongue position. While Ray's F1 is relatively close to the guest's, his F2 is considerably higher, reflecting a more fronted articulation. This F2 discrepancy reveals a lack of phonetic alignment, meaning Ray does not fully mirror the guest's articulation. Thus, the utterance is better categorized as phonetic divergence.
R13-D13	"Yes, I am <u>talking</u> to you."	/ɔ:/	415	739	828	1427	-	-	In the scene where Ray repeats the utterance <i>talking</i> after a restaurant guest, their productions of the vowel /ɔ:/ differ considerably. The guest produces F1 = 414 Hz and F2 = 1152 Hz, while Ray's vowel shows a much higher F1 at 739 Hz and F2 at 1427 Hz. Compared to the Standard Southern British (SSB) average for /ɔ:/ (F1 $\approx$ 415 Hz, F2 $\approx$ 828 Hz), both speakers deviate, but Ray's articulation is notably more open (indicated by his higher F1) and more fronted (indicated by his higher F2). These deviations likely stem from their respective accent backgrounds, Ray's Irish English and the guest's possibly non-native or regional variety. Since neither speaker's vowel aligns closely with the other nor with the SSB standard, this reflects phonetic divergence.

R14-D14	“That’s for John Lennon, you Yankee fucking <u>cunt</u> !”	/ʌ/	644	555	1259	1086	-	-	In the scene where Ray uses the word <i>cunt</i> to insult a restaurant guest, he produces the vowel /ʌ/ with an F1 of 555 Hz and an F2 of 1086 Hz. Compared to the average formant values of Standard Southern British (SSB) English for /ʌ/ (F1 ≈ 644 Hz, F2 ≈ 1259 Hz), both of Ray’s formant values are lower. The reduced F1 suggests a higher tongue position (less open vowel), while the lowered F2 indicates a more retracted articulation. These features align with Ray’s Irish English background, where /ʌ/ is often realized further back in the mouth. Combined with the confrontational intent behind the word, the acoustic deviation reinforces the interpersonal distance being expressed, marking this utterance as a phenomenon of phonetic divergence.
R15-D15	“Of course, you can’t fucking <u>see</u> !”	/i:/	280	325	2249	1789	-	-	In the scene where Ray repeats the word <i>see</i> after Erik, Erik produces the vowel /i:/ with an F1 of 390 Hz and F2 of 2178 Hz, while Ray’s version shows F1 = 325 Hz and F2 = 1789 Hz. Both speakers deviate from the average formant values of Standard Southern British (SSB) English for /i:/ (F1 ≈ 280 Hz, F2 ≈ 2249 Hz), with higher F1 values indicating slightly more open articulation and Ray’s markedly lower F2 suggesting a more retracted tongue position. Although their F1 values are relatively close, the considerable gap in F2, particularly Ray’s distance from both Erik and the SSB norm, signals a lack of alignment, categorizing this utterance as phonetic divergence.

R16-D16	“Well, I’m definitely fighting with the <u>blacks</u> ...”	/æ/	690	725	1550	1250	-	-	In the scene where Ray responds to Jimmy’s offensive remark toward Black people, he repeats the word <i>blacks</i> after Jimmy. Jimmy produces the vowel /æ/ with an F1 of 979 Hz and an F2 of 1415 Hz, which significantly deviates from the average formant values of Standard Southern British (SSB) English for /æ/ (F1 ≈ 690 Hz, F2 ≈ 1550 Hz). His elevated F1 indicates a much more open articulation, while the slightly lower F2 suggests a slightly retracted tongue position, both features commonly associated with American English, particularly in emphatic or stressed speech. Ray, in contrast, produces /æ/ with an F1 of 725 Hz and an F2 of 1250 Hz. Although his F1 is relatively close to the SSB average, his F2 is considerably lower, reflecting a more backed articulation, which aligns with certain realizations of /æ/ in Irish English. Given that both speakers’ vowel productions deviate from SSB targets in different directions and their formant values are not acoustically close to each other, this utterance is best categorized as phonetic divergence.
R17-D17	“ <u>Quickly</u> , now!”	/ɪ/	367	719	1757	1562	-	-	In the scene where Ray yells <i>quickly</i> at Marie, the hotel owner, he produces the vowel /ɪ/ with an F1 of 719 Hz and an F2 of 1562 Hz. These values deviate notably from the average formant values of Standard Southern British (SSB) English for /ɪ/, which are approximately F1 = 367 Hz and F2 = 1757 Hz. The significantly higher F1 suggests a much more open vowel articulation, while the lower F2 indicates a more retracted tongue position. This deviation is likely influenced by the emotional

										intensity of the scene, as Ray delivers the line in a raised, irritated tone. Emotional speech often leads to articulatory exaggeration, such as wider mouth opening and reduced tongue precision. Given the acoustic distance from the SSB norm and the utterance's aggressive interpersonal function, this utterance is best categorized as phonetic divergence.
R18-D18	"I completely <u>promise</u> , Harry."	/ɪ/	367	363	1757	1320	-	-		In the tense scene where Ray repeats the utterance <i>promise</i> after Harry, both speakers show deviation from the average formant values of the Standard Southern British (SSB) English vowel /ɪ/ (F1 ≈ 367 Hz, F2 ≈ 1757 Hz). Harry produces the vowel with an F1 of 519 Hz and an F2 of 2349 Hz, indicating a much more open and fronted articulation. This may reflect heightened emotional intensity, even though his tone remains relatively composed. In contrast, Ray's production shows an F1 of 363 Hz, which closely aligns with the SSB average, but his F2 drops significantly to 1320 Hz, pointing to a more retracted tongue position. The acoustic gap, particularly in F2, suggests that Ray's articulation diverges from Harry's. Coupled with the emotional context of fear and restraint in Ray's tone, the utterance is best categorized as phonetic divergence.
R19-D19	"What <u>exactly</u> am I trying to say?"	/æ/	690	654	1550	1261	-	-		In the scene where Ray repeats the utterance <i>exactly</i> after an American tourist, both speakers produce the vowel /æ/ with formant values that deviate from the average values of Standard Southern British (SSB) English (F1 ≈ 690 Hz, F2 ≈ 1550 Hz). The tourist's realization shows an F1 of 569 Hz and an F2 of 1441

									Hz, indicating a more closed and slightly backed articulation, which is consistent with American English tendencies for /æ/. Ray's production shows an F1 of 654 Hz and an F2 of 1261 Hz, values that also diverge from the SSB norm and do not closely approximate the tourist's. The lack of formant similarity between the two speakers, combined with their shared deviation from SSB targets, suggests that Ray does not adjust his articulation to align.
R20-D20	"I've got four <u>grams</u> on me..."	/æ/	690	546	1550	1358	-	-	In the scene where Ray repeats the utterance <i>grams</i> , previously spoken by Ken, both speakers produce the vowel /æ/ with formant values that deviate from the Standard Southern British (SSB) English average (F1 ≈ 690 Hz, F2 ≈ 1550 Hz). Ken's production shows F1 = 443 Hz and F2 = 1302 Hz, while Ray produces F1 = 546 Hz and F2 = 1358 Hz. Although their F2 values are relatively close, suggesting some similarity in tongue advancement, their F1 values differ more substantially, with Ray using a slightly more open articulation. However, both speakers' F1 values remain considerably lower than the SSB norm, indicating that they produced a less open vowel, likely influenced by regional accent features. The overall acoustic distance from SSB and between each other suggests that full phonetic convergence does not occur, and this utterance can be categorized as a phenomenon of divergence.

2. Ken Divergence

Code	Utterance	Vowel	F1 (Hz)		F2 (Hz)		F3 (Hz)		Interpretation
			std	measured	std	measured	std	measured	
K1-D1	“Harry can get <u>guns</u> anywhere.”	/ʌ/	644	772	1259	1740	-	-	Ray says <i>guns</i> with an F1 of 742 Hz and an F2 of 2359 Hz. These values show a more open (higher F1) and highly fronted (much higher F2) realization of the vowel /ʌ/ compared to the average Standard Southern British (SSB) English values, which are approximately F1 ≈ 644 Hz and F2 ≈ 1259 Hz. Ken replies with guns at F1 = 772 Hz and F2 = 1740 Hz, also producing a more open and fronted vowel than the SSB norm. While Ken’s F1 is slightly higher than Ray’s, indicating an even more open articulation, their F2 values differ substantially, with Ray’s being much more fronted. This significant acoustic distance, especially in tongue advancement (F2), suggests that Ken does not fully accommodate Ray’s vowel quality. Despite some similarity in vowel height (F1), the divergence in F2 indicates that this exchange is better categorized as phonetic divergence.
K2-D2	“Yes, he is a bit of a <u>cock</u> .”	/ɒ/	558	853	1047	1473	-	-	In this scene, Marie, the hotel owner says <i>cock</i> with the vowel /ɒ/ produced at F1 = 791 Hz and F2 = 1257 Hz, both of which are higher than the average formant values for /ɒ/ in Standard Southern British (SSB) English (F1 ≈ 558 Hz, F2 ≈ 1047 Hz). These elevated values likely reflect L1 transfer from her Belgian accent, which may lead to a more open and fronted vowel articulation. When Ken repeats the word, his vowel is even more open and fronted, with F1 = 853 Hz and F2 = 1473 Hz. This phenomenon may be influenced by his speech style, delivered slowly with a hesitation, which suggests emotional restraint or discomfort. Although Ken utters the same lexical item, the increase in both F1 and F2, especially the significant F2 distance from Marie’s production, indicates a lack of precise phonetic alignment. Therefore, this utterance is best categorized as phonetic divergence.

K3-D3	“Oh, we shall strike a balance between <u>culture</u> and fun.”	/ʌ/	644	623	1259	1127	-	-	In the conversation, Ray casually says <i>culture</i> , and Ken repeats it shortly after. The primary focus is on the vowel /ʌ/ in the first syllable <i>cul-</i> . Ray produces this vowel with an F1 of 900 Hz and an F2 of 1201 Hz, while Ken’s production shows F1 = 623 Hz and F2 = 1127 Hz. Compared to the average formant values of Standard Southern British (SSB) English for /ʌ/ (F1 ≈ 644 Hz, F2 ≈ 1259 Hz), Ken’s pronunciation is slightly closer to the standard, while Ray’s much higher F1 suggests a more open articulation. This is likely influenced by Ray’s Irish English accent, which tends to maintain a more fully articulated quality in unstressed vowels, unlike the reduced and centralized realization often found in SSB. The significant difference in both F1 and F2 between the two speakers indicates that Ken does not accommodate Ray’s articulation. Instead, he maintains his speech pattern, making this utterance a phenomenon of phonetic divergence.
K4-D4	“Of course, you don’t <u>fucking</u> have to!”	/ʌ/	644	676	1259	1378	-	-	Ken says <i>fuck</i> in a half-whisper, clearly irritated by Ray’s refusal to cooperate. The vowel /ʌ/ in his utterance has an F1 of 676 Hz and an F2 of 1378 Hz. While the F1 remains relatively close to the average formant value of Standard Southern British (SSB) English (F1 ≈ 644 Hz), the F2 is considerably higher than the typical SSB value (F2 ≈ 1259 Hz), indicating a more fronted articulation. This deviation likely stems from the whispered and emotionally tense delivery. Whispered speech lacks vocal fold vibration, which can lead to less precise articulatory targets, while emotional strain often causes tongue and jaw tension that pushes vowels forward, especially in central vowels like /ʌ/. As a result, Ken’s vowel sounds are sharper and more fronted. Since the articulation reflects his emotional state rather than an attempt to align phonetically with Ray, the utterance is categorized as phonetic divergence.

K5-D5	“Well, technically, your bare <u>hands</u> can kill somebody, too.”	/æ/	690	540	1550	1454	-	-	In the scene where Ken repeats <i>hands</i> after Ray, the vowel /æ/ is the focus. Ray produces it with an F1 of 740 Hz and F2 of 1408 Hz, indicating a more open and somewhat centralized articulation, likely influenced by his Irish English background. Ken’s production, with F1 = 540 Hz and F2 = 1454 Hz, deviates from both Ray’s values and the average formant values of Standard Southern British (SSB) English for /æ/ (F1 ≈ 690 Hz, F2 ≈ 1550 Hz). His much lower F1 points to a significantly more closed vowel, possibly as an attempt to avoid the extreme openness of SSB /æ/ while not fully adapting to Ray’s articulation. Although their F2 values are relatively close, the substantial difference in F1 reflects a lack of alignment in vowel height, supporting the categorization of this utterance as phonetic divergence.
K6-D6	“He was a <u>lollipop</u> man.”	/ɒ/	558	630	1047	1414	-	-	In the scene where Ken repeats <i>lollipop</i> after Ray, the vowel /ɒ/ becomes the focus. Ray, with his Irish accent, produces /ɒ/ with F1 = 664 Hz and F2 = 1208 Hz, while Ken’s production has F1 = 630 Hz and F2 = 1414 Hz. Although their F1 values, indicating vowel height, are relatively close and both higher than the SSB average (F1 ≈ 558 Hz, F2 ≈ 1047 Hz), their F2 values differ substantially. Ken’s notably higher F2 suggests a more fronted articulation, deviating both from SSB norms and from Ray’s more backed production. Despite some similarity in vowel openness, the gap in tongue position (F2) indicates a lack of phonetic alignment, marking this utterance as a phenomenon of divergence.

K7-D7	"I know what you're trying to <u>talk</u> about."	/ɔ:/	415	544	828	1204	-	-	In the scene where Ken repeats the utterance <i>talk</i> after Ray, who speaks with an Irish accent, a shift in Ken's vowel quality is observed. Ray produces the vowel /ɔ:/ with F1 = 645 Hz and F2 = 1419 Hz, while Ken's version shows F1 = 544 Hz and F2 = 1204 Hz. Both sets of values deviate notably from the average SSB formant values for /ɔ:/ (F1 ≈ 415 Hz, F2 ≈ 828 Hz), suggesting more open and fronted articulations. Ken's production, although less extreme than Ray's, appears to shift slightly in Ray's direction, especially in F2, indicating a partial adjustment. However, the acoustic distance between their productions, particularly in tongue height and backness, remains significant. Therefore, despite subtle alignment, this utterance is best categorized as phonetic divergence.
K8-D8	"Well, technically, your bare hands can <u>kill</u> somebody, too."	/ɪ/	367	448	1757	1404	-	-	In the scene where Ken repeats the utterance <i>kill</i> after Ray, the vowel /ɪ/ becomes the main point of comparison. Ray produces /ɪ/ with F1 = 442 Hz and F2 = 1621 Hz, while Ken follows with F1 = 448 Hz and F2 = 1404 Hz. Compared to the average formant values of Standard Southern British (SSB) English for the /ɪ/ vowel (F1 ≈ 367 Hz, F2 ≈ 1757 Hz), both speakers deviate noticeably, especially in F2. Ken's F2 is not only lower than the SSB average but also lower than Ray's, likely due to coarticulatory effects from the velarized articulation of the following /l/ in <i>kill</i> , which typically causes tongue retraction and F2 lowering. Although Ken's F1 is close to Ray's, the significant gap in F2 suggests divergence rather than convergence.

K9-D9	“I don’t know what I <u>believe</u> .”	/i:/	280	339	2249	1654	-	-	In the scene where Ken repeats the utterance <i>believe</i> after Ray, the vowel /i:/ in the second syllable becomes the main point of comparison. Ray produces it with F1 = 362 Hz and F2 = 1943 Hz, both of which deviate from the average formant values of Standard Southern British (SSB) English (F1 ≈ 280 Hz, F2 ≈ 2249 Hz), indicating a slightly more open and backed articulation, consistent with features of Irish English. Ken, in turn, produces the vowel with F1 = 339 Hz and F2 = 1654 Hz. Although Ken’s F1 is somewhat close to Ray’s, his F2 is even further from the SSB norm and significantly lower than Ray’s, indicating greater tongue retraction. This acoustic difference, along with Ken’s more prolonged and tense articulation compared to Ray’s lighter and shorter vowel, signals a phenomenon of phonetic divergence.
K10-D10	“Two <u>manky</u> hookers and a racist dwarf.”	/æ/	690	743	1550	1376	-	-	In the scene where Ken gets angry because Jimmy insults Black people, indirectly offending Ken’s late wife, who was also Black, he uses the utterance <i>manky</i> to refer to the two prostitutes accompanying Jimmy. On the /æ/ vowel, Ken produces an F1 of 743 Hz and an F2 of 1376 Hz. His F1 is slightly higher than the average formant value of Standard Southern British (SSB) English for /æ/ (F1 ≈ 690 Hz), suggesting a more open articulation, while his F2 is noticeably lower than the SSB average (F2 ≈ 1550 Hz), indicating a more retracted tongue position. This shift could result from articulatory tension driven by anger, which often affects vowel clarity and tongue placement. The deviation from SSB norms, coupled with the confrontational tone and intention to assert dominance, marks this utterance as a phenomenon of phonetic divergence.

K11- D11	“Two manky hookers and a <u>racist</u> dwarf.”	/ɪ/	367	369	1757	2095	-	-	In the scene following Ken’s use of the utterance <i>manky</i> , he continues with the utterance <i>racist</i> , directly addressing Jimmy after his offensive speech. On the /ɪ/ vowel, Ken produces an F1 of 369 Hz and an F2 of 2095 Hz. These values are close to the average formant values of Standard Southern British (SSB) English for /ɪ/ (F1 ≈ 367 Hz, F2 ≈ 1757 Hz), though both F1 and F2 are slightly higher. The raised F1 suggests a slightly more open articulation, while the elevated F2 indicates increased fronting of the tongue. These articulatory features may reflect heightened emotional intensity in Ken’s voice as he expresses anger and moral judgment. Despite the near match with SSB values, the social function of the utterance, to express strong disapproval and create interpersonal distance, supports this utterance as phonetic divergence.
K12- D12	“Of course I’m going to <u>fucking</u> do it.”	/ʌ/	644	637	1259	1522	-	-	In the scene where Ken gets annoyed because Yuri talks too much and keeps asking him questions, Ken says the utterance <i>fucking</i> to express his irritation, though in a calm and nearly whispered tone. On the /ʌ/ vowel, Ken produces an F1 of 637 Hz and an F2 of 1522 Hz. Compared to the average formant values of Standard Southern British (SSB) English for /ʌ/ (F1 ≈ 644 Hz, F2 ≈ 1259 Hz), his F1 is slightly lower, indicating a slightly higher tongue position, while his F2 is considerably higher, suggesting a more fronted articulation. These deviations may result from the whisper-like delivery and emotional restraint, as low-intensity speech often causes articulatory shifts such as fronting and reduced precision. Given both the acoustic distance from SSB norms and the emotional function of the utterance, this utterance represents a phenomenon of phonetic divergence.

K13-D13	“ <u>Oddly?</u> How?”	/ɒ/	558	591	1047	1237	-	-	In the scene where Ken repeats the utterance <i>oddly</i> , previously said by Marie, the Belgian hotel owner, an acoustic variation can be observed. On the /ɒ/ vowel, Marie produces an F1 of 796 Hz and an F2 of 1191 Hz, both noticeably higher than the average formant values of Standard Southern British (SSB) English for /ɒ/ (F1 ≈ 558 Hz, F2 ≈ 1047 Hz). These elevated values indicate a more open and fronted articulation, possibly due to her Belgian accent. Ken’s production, with F1 = 591 Hz and F2 = 1237 Hz, also deviates from the SSB norm. His F1, though lower than Marie’s, is still slightly above the SSB average, indicating a relatively open vowel; meanwhile, his F2 is even higher than the standard, suggesting greater tongue fronting. Despite a closer F2 to Marie’s, the gap in F1 and the mutual departure from SSB targets indicate that Ken does not fully align with her pronunciation. This acoustic distance, combined with differing articulatory settings, reflects a phenomenon of phonetic divergence.
K14-D14	“After what’s <u>done?</u> ”	/ʌ/	644	546	1259	1235	-	-	In the scene where Ken repeats the utterance <i>done</i> , originally said by Harry, he appears to question the meaning behind it. Harry produces the /ʌ/ vowel with an F1 of 769 Hz and an F2 of 1435 Hz, while Ken’s version shows an F1 of 546 Hz and an F2 of 1277 Hz. Compared to the average formant values of Standard Southern British (SSB) English for /ʌ/ (F1 ≈ 644 Hz, F2 ≈ 1259 Hz), both speakers deviate in different directions. Harry’s formants, while elevated, still reflect an open and slightly fronted vowel quality typical of emotionally charged speech. In contrast, Ken’s much lower F1 indicates a more closed articulation, and his slightly elevated F2 suggests increased tongue fronting. These articulatory differences may be because of Ken’s intentional distancing or a shift in vowel target toward a tenser or more careful delivery. Since their formant values do not align with each other and diverge from the SSB reference, this utterance represents a phenomenon of phonetic divergence.

K15- D15	“It <u>stops</u> with me, Harry.”	/ɒ/	558	678	1047	1271	-	-	In the scene where Ken repeats the utterance <i>stop</i> , originally said by Harry, there appears to be a limited attempt at phonetic alignment. Harry produces the /ɒ/ vowel with an F1 of 750 Hz and an F2 of 1159 Hz, while Ken’s production shows an F1 of 678 Hz and an F2 of 1271 Hz. Compared to the average formant values of Standard Southern British (SSB) English for /ɒ/ (F1 ≈ 558 Hz, F2 ≈ 1047 Hz), both speakers deviate by producing a more open and fronted vowel. Although Ken’s vowel is slightly closer to the SSB norm in height (lower F1), his higher F2 suggests increased fronting relative to Harry’s. The acoustic gap between their productions, particularly in F2, indicates that, while there may be a mild adjustment, their articulatory targets remain distinct. This formant distance represents a phenomenon of phonetic divergence.
K16- D16	“Harry, he’s definitely <u>gone</u> .”	/ɒ/	558	644	1047	1303	-	-	In the scene where Harry tells Ken to check whether Ray has left, Ken repeats the utterance <i>gone</i> , which Harry had just used in his command. On the /ɒ/ vowel, Harry produces an F1 of 544 Hz and an F2 of 1795 Hz, while Ken’s production shows an F1 of 644 Hz and an F2 of 1303 Hz. When compared to the average formant values of Standard Southern British (SSB) English for /ɒ/ (F1 ≈ 558 Hz, F2 ≈ 1047 Hz), Ken’s vowel is noticeably more open and fronted, as reflected in the higher F1 and F2 values. Meanwhile, only Harry’s F1 falls within the SSB range, but his F2 is substantially higher than expected, suggesting a fronted articulation as well. The significant acoustic distance between their formants, particularly the large F2 gap, indicates that Ken’s production does not closely approximate Harry’s. This articulatory difference represents a phenomenon of phonetic divergence.
K17- D17	“It wouldn’t solve his <u>problem</u> .”	/ɒ/	558	643	1047	1230	-	-	In the scene where Ken repeats the utterance <i>problem</i> , previously spoken by Harry, differences in vowel quality become evident. On the /ɒ/ vowel, Harry produces an F1 of 573 Hz and an F2 of 1031 Hz, while Ken’s formants are F1 = 643 Hz and F2 = 1230 Hz. Compared to the average formant values of Standard Southern British (SSB) English for /ɒ/ (F1 ≈ 558 Hz, F2 ≈ 1047 Hz), both

									speakers produce slightly more open vowels (higher F1) and noticeably more fronted articulations (higher F2). Although Harry's production is somewhat closer to the SSB norm, Ken's vowel shows greater deviation, especially in tongue fronting. The lack of acoustic alignment between their formant values, particularly in F2, represents a phenomenon of phonetic divergence.
K18-D18	"I retract that bit about your cunt fucking <u>kids</u> ."	/ɪ/	367	479	1757	1639	-	-	In the scene where Ken repeats the utterance <i>kids</i> , previously spoken by Harry, there is a clear difference in vowel articulation. On the /ɪ/ vowel, Harry produces an F1 of 446 Hz and an F2 of 2167 Hz, while Ken produces an F1 of 479 Hz and an F2 of 1639 Hz. Compared to the average formant values of Standard Southern British (SSB) English for /ɪ/ (F1 ≈ 367 Hz, F2 ≈ 1757 Hz), both speakers produce more open vowels, as reflected in their higher F1 values. However, Ken's F2 is not only lower than the SSB norm but also significantly lower than Harry's, indicating a more retracted tongue position. These formant differences suggest a lack of phonetic alignment between the two speakers, making this utterance a phenomenon of phonetic divergence.
K19-D19	"Oh, you fucking <u>cunt</u> !"	/ʌ/	644	1108	1259	1946	-	-	In the scene where Ken is shot in the leg by Harry at the top of the tower, he screams the utterance <i>cunt</i> to insult Harry while also expressing pain. On the /ʌ/ vowel, Ken produces an F1 of 1108 Hz and an F2 of 1946 Hz, both of which are significantly higher than the average formant values of Standard Southern British (SSB) English for /ʌ/ (F1 ≈ 644 Hz, F2 ≈ 1259 Hz). This marked elevation in both formants likely reflects the combined effect of emotional and physical distress. Shouting due to pain and anger can increase vocal tension and exaggerate articulatory gestures, resulting in a more open (higher F1) and fronted (higher F2) vowel articulation. Since the utterance functions to express aggression and the vowel quality deviates considerably from SSB norms, it illustrates a phenomenon of phonetic divergence.
K20-D20	" <u>Alcoves?</u> Yes."	/æ/	690	703	1550	1746	-	-	In the scene where Ken repeats the utterance <i>alcoves</i> after Yuri says it, clear phonetic differences emerge. On

									the /æ/ vowel, Yuri, speaking with a Belgian accent, produces an F1 of 565 Hz and an F2 of 2394 Hz, while Ken's production shows an F1 of 703 Hz and an F2 of 1118 Hz. Ken's F1 is higher than the average formant value of Standard Southern British (SSB) English for /æ/ (F1 ≈ 690 Hz), indicating a slightly more open articulation, while his F2 is considerably lower than the SSB norm (F2 ≈ 1550 Hz), suggesting a more retracted tongue position. Meanwhile, Yuri's extremely high F2 reflects a highly fronted articulation, consistent with features of Belgian-accented English. Since both speakers deviate from SSB norms and their vowel realizations differ substantially from each other, this utterance reflects a phenomenon of phonetic divergence.
K21-D21	"Yeah, the <u>swan</u> 's..."	/ɒ/	558	898	1047	1439	2481	2723	In the scene where Ken repeats the utterance <i>swans</i> , which was previously spoken by Harry, Harry produces the vowel /ɒ/ with F1 = 737 Hz, F2 = 1102 Hz, and F3 = 2243 Hz. The inclusion of the F3 measurement is relevant due to the audible nasality present in Harry's pronunciation, which often lowers F3 values. Ken, on the other hand, produces F1 = 898 Hz, F2 = 1439 Hz, and F3 = 2723 Hz. All of these values deviate from the average formant values of Standard Southern British (SSB) English for /ɒ/ (F1 ≈ 558 Hz, F2 ≈ 1047 Hz, F3 ≈ 2481 Hz). The elevated F1 values indicate that both speakers articulate the vowel more openly than is typical in RP, while the increased F2 values, especially in Ken's production, suggest a more fronted tongue position than expected for the typically back vowel /ɒ/. Additionally, Ken's unusually high F3 value may reflect increased articulatory tension or differences in vocal tract configuration during speech production, potentially influenced by emphasis or emotion. Since neither speaker's production aligns with SSB norms and their acoustic realizations differ considerably from each other, this utterance represents a phenomenon of phonetic divergence.
K22-D22	"Yeah. Of course, like in a good	/i:/	280	380	2249	2198	-	-	In the scene where Ray repeats the utterance <i>dream</i> , which was

	<u>dream</u> .”								previously spoken by Harry, Harry produces the vowel /i:/ with F1 = 351 Hz and F2 = 1371 Hz. Ray, on the other hand, produces F1 = 380 Hz and F2 = 2198 Hz. Both productions deviate from the average formant values of Standard Southern British (SSB) English for /i:/, which are typically around F1 ≈ 280 Hz and F2 ≈ 2249 Hz. Harry’s elevated F1 and considerably lower F2 indicate a more open and backed articulation than expected for /i:/, possibly influenced by his regional accent or individual variation. Ray’s production also reflects a more open vowel, with his F1 higher than the SSB average, but his F2 aligns closely with RP targets. Despite the distance in F2, the noticeable difference in F1 between the two speakers, combined with Harry’s strong deviation from SSB norms, supports the interpretation of this utterance as a phenomenon of phonetic divergence.
K23-D23	“No. Still hasn’t <u>called</u> .”	/ɔ:/	416	657	828	1202	-	-	In the scene where Ken repeats the utterance <i>call</i>, which was previously spoken by Ray, Ray produces the vowel /ɔ:/ with F1 = 670 Hz and F2 = 1141 Hz. Ken, in response, produces F1 = 657 Hz and F2 = 1202 Hz. Both sets of formant values deviate considerably from the average formant values of Standard Southern British (SSB) English for /ɔ:/, which are typically around F1 ≈ 416 Hz and F2 ≈ 828 Hz. The elevated F1 values in both productions indicate a more open articulation than expected in RP, while the higher F2 values suggest a more fronted tongue position than what is typical for /ɔ:/. Although Ken’s F1 closely matches Ray’s, the difference in their F2 values, along with their overall deviation from RP norms, suggests that the imitation is not fully successful. Therefore, this utterance is considered a phenomenon of divergence.
K24-D24	“Do I think what is <u>good</u> ?”	/ʊ/	379	451	1173	1109	-	-	In a post-conflict moment where the tension begins to ease, Ray utters <i>good</i> with an F1 of 432 Hz and an F2 of 1284 Hz, followed by Ken’s repetition with an F1 of 451 Hz and an F2 of 1109 Hz. While both productions deviate from the average formant values of Standard Southern British (SSB) English for the vowel /ʊ/ (F1 ≈ 379 Hz, F2 ≈ 1173 Hz), the

discrepancy in their F2 values is particularly notable. Ray's higher F2 suggests a more fronted articulation, likely influenced by features of Irish English, whereas Ken's lower F2 indicates a more retracted tongue position. Although their F1 values are relatively similar, suggesting comparable tongue height or vowel openness, the distinct difference in backness, as reflected in F2, indicates that Ken did not fully accommodate Ray's articulation. Therefore, despite the more neutral emotional tone of the scene, this utterance exemplifies a phenomenon of phonetic divergence.



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PENGESAHAN REVISI

Judul Skripsi : Phonetic Accommodation of Monophthong Vowels
 in Main Characters' Utterances in "In Bruges"
 Movie
 Nama lengkap : Mutia Azizah
 N.I.M. : 1612100090

No.	Nama Penguji	Tanggal	Tanda tangan	Keterangan
1.	Pariyanti	14/7/25		OK
2.	Dona Rahayu	15/7/25		ACC
3.	Bramantya Pradipta	14/7/25		OK
4.				