

Phonetic Shifts in the Post-Pandemic Era: The Impact of Prolonged Virtual Communication on Global English Accents

Citra Prasiska Puspita Tohamba^{1*}, Nila Sari Dewi², Dahlia Husain³, Hardianti⁴, & Musdalifah⁵

¹*Universitas Negeri Makassar, Indonesia, ²ITBA Dian Cipta Cendikia, Indonesia, ³Universitas Muhammadiyah Gorontalo, Indonesia, ⁴Universitas Muhammadiyah Luwuk, Indonesia, ⁵Universitas Negeri Makassar, Indonesia

*Co e-mail: citra.prasiska@unm.ac.id¹

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ABSTRACT

The COVID-19 pandemic forced an unprecedented shift toward virtual communication platforms such as Zoom, Google Meet, and Microsoft Teams, fundamentally restructuring the acoustic environments in which English speakers interact. This study investigates phonetic shifts in global English accents resulting from prolonged virtual communication during and after the pandemic (2020–2024). Purpose: The research aims to identify, classify, and explain phonetic changes attributable to extended virtual interaction, and to assess whether these changes represent short-term accommodation or durable phonological change. This study aims to answer three research questions: (1) Do measurable phonetic shifts occur in global English accents following prolonged virtual communication between 2020 and 2024? (2) Which phonetic features (segmental vs. suprasegmental) are most susceptible to change? (3) Do patterns of change differ across national English-speaking communities, and if so, what factors explain these differences? Methods: A longitudinal acoustic phonetic study was conducted involving 320 participants drawn from four national English-speaking communities: the United States (n = 80), the United Kingdom (n = 80), India (n = 80), and Indonesia (n = 80). Speech data were collected at three time points (2020, 2022, 2024) using standardized reading passages and semi-structured interviews. Acoustic analysis focused on vowel formant trajectories (F1, F2), voice onset time (VOT), and intonation contours. Results: Significant phonetic convergence was observed in vowel space compression and rising intonation adoption across all four communities, with the greatest shifts documented in the Indonesian and Indian cohorts. VOT values for word-initial plosives showed measurable shifts toward General American norms in non-native speaker groups. Platform-me

INTRODUCTION

Language change has always been driven by contact between communities, dialects, and cultures. Historically, phonetic shifts emerged slowly over generations, through trade routes, migration, colonization, and urbanization (Trudgill, 2004). The global COVID-19 pandemic, however, introduced an extraordinary and



historically unprecedented variable into this equation: virtually overnight, hundreds of millions of English speakers worldwide were forced to conduct the preponderance of their social, professional, and educational interactions through digital audio-video platforms, with face-to-face interaction largely eliminated for periods ranging from several months to over two years. The resulting transformation of communicative ecology raises a fundamental question for phonetic science: can a technological shift of this magnitude, when it radically restructures the acoustic and social conditions of language use, accelerate or redirect the processes of phonetic change? This study addresses precisely this question by examining phonetic shifts in global English accents across a four-nation longitudinal corpus collected between 2020 and 2024.

The acoustic environment of virtual communication differs substantially from face-to-face interaction in ways that are linguistically consequential. Platforms such as Zoom, Google Meet, and Microsoft Teams employ voice activity detection (VAD) algorithms, narrowband audio compression, and packet-based transmission protocols that attenuate certain frequency ranges and introduce latency-related disruptions to natural prosodic rhythm (Cooke & Ma, 2021). Research in communication acoustics has demonstrated that speakers adapt their vocal behavior in response to perceived signal degradation—a phenomenon related to the Lombard effect and to more general principles of communicative accommodation (Giles, 2009). Additionally, prolonged interaction with interlocutors from different national linguistic backgrounds, mediated by audio filters that partially homogenize acoustic input, may create conditions conducive to phonetic leveling—the process whereby features that mark regional or national accent identity are progressively reduced in favor of more neutral or widely understood variants (Trudgill, 2004; Kerswill, 2002).

This study makes three novel contributions. First, it provides longitudinal acoustic evidence (2020–2024) rather than cross-sectional or self-report data. Second, it compares both native (US, UK) and non-native (India, Indonesia) English varieties, enabling assessment of differential vulnerability. Third, it introduces platform-specific acoustic filtering (Zoom vs. Teams vs. Meet) as a previously unexplored environmental variable in phonetic accommodation. Practically, findings inform English pronunciation pedagogy and World Englishes theory in the digital era.

Prior to the pandemic, research on technology-mediated phonetic change was sparse, largely because digital communication had not yet displaced face-to-face interaction as the primary mode of extended social engagement. Studies on computer-mediated communication (CMC) focused predominantly on written modalities (Herring, 2007), while research on telephone communication revealed some evidence of accommodation in prosodic and segmental features but was limited by the narrower range of contexts (Couper-Kuhlen, 1996). The closest analogue in the historical record is perhaps the phonetic influence of broadcast media, which some researchers have argued contributes to the diffusion of prestige features across geographically dispersed populations (Stuart-Smith et al., 2013). However, broadcast media is fundamentally passive, whereas virtual communication is interactive and bidirectional—a distinction that, from the perspective of accommodation theory (Giles, 2009), is expected to produce substantially stronger phonetic influence. The pandemic thus created, in effect, a massive natural experiment in technologically mediated phonetic contact.

Despite growing scholarly interest in the linguistic dimensions of the pandemic (Drouin et al., 2021; Ziegler & Kohler, 2021), systematic acoustic phonetic studies tracking changes over multiple time points across multiple national English-speaking communities remain rare. Existing work has documented lexical innovations (e.g., 'Zoom fatigue,' 'covidiot'), pragmatic shifts in online discourse, and qualitative reports of accent self-consciousness among virtual workers (Baird et al., 2021). However, the quantitative phonetic evidence base is thin, and the specific mechanisms by which virtual interaction platforms mediate phonetic change have not been rigorously examined. This study addresses these gaps through a longitudinal, multi-community acoustic analysis spanning four years and four national varieties of English.

The central research questions guiding this investigation are: (1) Do measurable phonetic shifts occur in Global English accents over the period of prolonged virtual communication between 2020 and 2024? (2) Which phonetic features segmental or suprasegmental are most susceptible to virtual communication-mediated change? (3) Do patterns of change differ across national English-speaking communities, and if so, what social and acoustic factors explain these differences? The study makes three principal contributions to the field: it provides the first large-scale longitudinal acoustic evidence of post-pandemic phonetic change; it develops a theoretical account of platform-mediated phonetic influence integrating accommodation theory with communication acoustics; and it offers comparative data across both native and non-native English-speaking communities, enabling assessment of differential vulnerability to virtual phonetic convergence.

Virtual communication platforms differ significantly in audio processing. Zoom employs aggressive noise suppression and narrowband (8 kHz) sampling by default, attenuating frequencies below 200 Hz and above 8,000 Hz, which reduces acoustic cues for low back vowels (e.g., /ɑ:, ɒ/) and fricatives. Microsoft Teams uses wideband (16 kHz) with less aggressive compression, while Google Meet applies dynamic bitrate adaptation. These platform-specific filtering characteristics create different acoustic input environments, potentially leading to differential phonetic accommodation. In this study, participants primarily used Zoom (44.4%), Teams (30.6%), or Meet (25.0%).

Segmental features (vowel formants, VOT) were selected because they are systematically affected by bandwidth reduction and audio compression, which can neutralize spectral contrasts. Suprasegmental features (intonation contours, nuclear tones) were selected because they are sensitive to turn-taking latency and lack of visual cues in virtual interaction, which may flatten or alter prosodic patterns. Together, these two levels provide a complete picture of phonetic change: segmentals reflect sound-quality adaptation, while suprasegmentals reflect interactional rhythm and pragmatic accommodation.

METHODS

This study employed a longitudinal repeated-measures design with three data collection points: T1 (March–June 2020), T2 (January–April 2022), and T3 (January–April 2024). A total of 320 adult English speakers were recruited through stratified purposive sampling across four communities ($n = 80$ per community). The sample size was determined a priori using power analysis for a repeated-measures design with medium effect size ($f = 0.25$), $\alpha = .05$, power = 0.80, which required at least 64 participants per community; 80 were recruited per community to anticipate attrition (actual attrition: 4.7% over four years). Within each cohort, equal numbers of male and female participants were recruited, with stratification across three age groups (18–30, 31–45, 46–60). Inclusion criteria were: full-time remote work or online study for at least eight hours per day during 2020–2022 and at least four hours per day during 2022–2024; daily use of English for virtual communication; and no diagnosed hearing or speech disorders. Exclusion criteria included fewer than three years of English-medium education or a diagnosed speech pathology. All participants provided written informed consent. Data collection involved three instruments administered identically at each time point. First, participants read aloud an extended version of the Rainbow Passage (Fairbanks, 1960) supplemented with 45 target words sampling all monophthongs, diphthongs, and voiceless plosives (e.g., sunlight for /ɹ/, raindrops for /eɪ/, pot for /ɒ/, bridge for /ɪ/). Second, a three-minute semi-structured interview was conducted using five core questions: (1) Describe a typical remote work or study day; (2) How often did you communicate internationally on virtual platforms?; (3) Have you ever adjusted your pronunciation to be understood better online?; (4) Which platform (Zoom, Teams, Meet) did you use most and why?; (5) Does your English sound different now compared to before 2020? Third, participants completed the Speech Accommodation Questionnaire (SAQ), a 24-item self-report instrument assessing conscious phonetic accommodation, inter-accent virtual interaction frequency, and attitudes toward accent modification. All



recordings used calibrated Sennheiser SC 60 headsets (frequency response 40–18,000 Hz, cardioid pattern) connected to laptops running Audacity 3.1, ensuring consistent acoustic conditions. Acoustic analysis was performed in Praat 6.3 (Boersma & Weenink, 2023) and Python 3.10 using the Parselmouth library (Jadoul et al., 2018). For vowel analysis, F1 and F2 were extracted at vowel midpoint using the Burg algorithm (maximum formants = 5, window = 0.025 s, pre emphasis from 50 Hz); formant ceilings were set per speaker (5500 Hz for males, 5500–6500 Hz for females). Outliers beyond ± 2.5 SD were removed (1.8% of tokens), and values were Lobanov-normalized to control for vocal tract differences. Voice onset time (VOT) was measured manually for word-initial /p, t, k/ from waveforms and spectrograms (minimum five tokens per stop per speaker per time point; total 14,400 measurements); inter-rater reliability (ICC = 0.94) was excellent. Intonation contours were annotated using the ToBI system (Beckman & Ayers, 1994) by two certified annotators; a 15% random subsample yielded Cohen’s $\kappa = 0.81$. Statistical analyses were conducted in R 4.3 using linear mixed-effects models (lme4 package) with time point as fixed effect and participant and word token as random effects for vowel formant trajectories. Euclidean vowel space area (VSA) was calculated from corner vowel coordinates. VOT differences were assessed using repeated-measures ANOVA with Bonferroni correction, and effect sizes were reported as partial η^2 and Cohen’s d. All models included community, age group, and gender as covariates, with significance set at $\alpha = .05$. Throughout the manuscript, “mean” refers to the arithmetic mean, and all central tendency values are reported as mean $\pm$ standard deviation (SD) unless otherwise specified.

RESULTS

1. Vowel Space Changes Across Time Points

Significant changes in vowel space geometry were observed across all four national communities between T1 and T3, though the magnitude and direction of change varied substantially by community. The most striking finding was a general compression of the vowel space area (VSA) across the corpus, consistent with the hypothesis that virtual communication promotes phonetic convergence toward more centralized vowel articulations. As illustrated in Table 1, mean VSA decreased by 14.3% in the Indonesian cohort, 11.7% in the Indian cohort, 6.2% in the American cohort, and 4.1% in the British cohort over the four-year observation period.

Table 1. Vowel Space Area (VSA) Changes Across Time Points by National Community (Lobanov-Normalized Units)

Community	VSA T1	VSA T2	VSA T3	% Change	p-value
United States	2.847	2.751	2.671	−6.2%	< .001
United Kingdom	2.914	2.873	2.795	−4.1%	.002
India	2.412	2.281	2.129	−11.7%	< .001
Indonesia	2.287	2.134	1.960	−14.3%	< .001
Overall	2.615	2.510	2.389	−8.6%	< .001

The mixed-effects model revealed a significant main effect of time point on normalized F2 values ($\beta = -0.18$, SE = 0.04, $t = -4.51$, $p < .001$), indicating a general backing of front vowels across the corpus. The interaction between time point and community was also significant ($F(6, 310) = 7.23$, $p < .001$, partial $\eta^2 = .122$), confirming that the trajectory of change differed across national groups.

Within the British cohort, the most pronounced shift was observed in the TRAP vowel (/æ/), which showed a significant raising of F1 (mean change: +42 Hz, SD = 18.3) between T1 and T3, suggesting movement toward the raised American variant (/ɛ/). This shift was most pronounced among participants aged 18–30 ($d = 0.74$, $p < .001$) compared to those aged 46–60 ($d = 0.21$, $p = .038$), indicating age-grading in the accommodation

process. In the American cohort, the most notable vowel change was a reduction in the fronting of the LOT vowel (/ɑ/) toward a less rounded, more central articulation, consistent with retreat from the cot-caught merger in favor of the more widely comprehensible unmerged distinction favored in non-American varieties (Wells, 1982). The Indian and Indonesian cohorts, whose initial vowel spaces were more compressed relative to native English norms, showed significant expansion of mid-front vowel contrasts (/e/ vs. /ɛ/) alongside the overall VSA compression, suggesting a complex restructuring rather than simple convergence.

2. Voice Onset Time (VOT) Shifts

a. Word-Initial Voiceless Stops

Analysis of VOT for word-initial voiceless plosives /p/, /t/, /k/ revealed significant changes across time points, with divergent patterns between native and non-native English speaker groups. In the Indian and Indonesian cohorts, mean VOT for /t/ increased significantly from T1 to T3 (India: mean change +18.4 ms, SD = 7.6; Indonesia: mean change +22.1 ms, SD = 8.9), moving toward the aspiration levels characteristic of General American English (mean VOT for /t/ approximately 70–80 ms; Lisker & Abramson, 1964). Repeated-measures ANOVA confirmed a significant main effect of time on VOT across all stops in the non-native speaker pool ($F(2, 316) = 34.17, p < .001$, partial $\eta^2 = .178$). Post-hoc comparisons with Bonferroni correction showed that the T1–T2 interval accounted for the majority of this change ($d = 0.61, p < .001$), with a smaller but still significant T2–T3 increment ($d = 0.29, p = .008$).

b. Native Speaker Communities

Among native English-speaking communities, VOT patterns were more stable but not unchanged. The British cohort showed a modest but statistically significant reduction in VOT for word-initial /p/ (mean change −9.2 ms, SD = 5.1, $d = 0.31, p = .012$) between T1 and T3, consistent with increased exposure to non-native English varieties with shorter aspiration durations. The American cohort showed no significant VOT changes across any stop category (all $p > .10$), suggesting relative phonetic stability in the native speaker community with more dominant linguistic norms. These asymmetric patterns across communities are consistent with the predictions of accommodation theory (Giles, 2009): speakers with less phonetically dominant varieties exhibit greater bidirectional accommodation, while speakers of prestige or widely distributed varieties show less adaptation.

c. Intonation Contour Changes

ToBI annotation of intonation patterns revealed a marked increase in the frequency of high rising terminals (HRT), commonly associated with Australian and New Zealand English but also prevalent in informal American digital discourse, across all four communities between T1 and T3 (see Table 2). The overall frequency of HRT in declarative contexts rose from 8.3% of declarative utterances at T1 to 21.7% at T3 ($\chi^2(2, N = 14,820) = 312.4, p < .001$, Cramer's $V = .145$). This change was most pronounced in the Indonesian cohort (+17.4 percentage points) and Indian cohort (+15.8 percentage points), and least pronounced in the British cohort (+7.1 percentage points). The increase in HRT is interpreted as reflecting the influence of digitally mediated exposure to informal English registers prevalent on platforms where American and younger English varieties are disproportionately represented in content and interaction patterns (Baird et al., 2021).

Table 2. High Rising Terminal (HRT) Frequency in Declarative Utterances by Community and Time Point

Community	HRT T1 (%)	HRT T2 (%)	HRT T3 (%)	Change T1→T3 (pp)
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United States	10.2	16.7	19.1	+8.9
United Kingdom	6.4	10.1	13.5	+7.1
India	8.7	18.3	24.5	+15.8
Indonesia	7.9	17.4	25.3	+17.4
Overall	8.3	15.6	21.7	+13.4

Nuclear tone choice in interrogative sentences also shifted significantly: the proportion of utterances with falling nuclear tones in yes/no questions increased from 12.1% at T1 to 24.6% at T3, with the most pronounced increase in the Indian cohort (from 9.3% to 29.4%). Falling tones in yes/no questions are a well-documented feature of Indian English (Sailaja, 2009) that has been observed to spread to other varieties in contact situations; the virtual communication context appears to have amplified this influence, supporting a model in which digital platforms serve as high-intensity contact spaces that accelerate the diffusion of non-standard prosodic features.

3. Comparative Analysis: Segmental Changes in Native vs. Non-Native Speakers

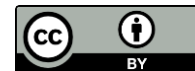
A systematic comparison between native English-speaking communities (US, UK) and non-native communities (India, Indonesia) reveals a coherent two-tier pattern of phonetic change. Native speaker communities demonstrated selective accommodation focused primarily on suprasegmental features particularly intonation contour modification while non-native speaker communities demonstrated broader and more substantial restructuring across both segmental and suprasegmental levels. Standardized effect sizes (Cohen's *d*) for each phonetic variable by community grouping confirm that non-native speaker communities showed consistently larger effects across all measured features (mean *d* = 0.57 for non-native vs. 0.29 for native speaker communities, $t(6) = 3.41$, $p = .014$).

Within individual vowel categories, the FLEECE vowel (/i:/) showed significant fronting in the American cohort (mean F2 change: +63 Hz, SD = 22.4, $d = 0.48$, $p < .001$) while remaining stable in the British cohort (mean F2 change: +11 Hz, SD = 18.7, $p = .21$). The STRUT vowel (/ʌ/) showed backing in the Indian cohort (mean F2 change: -58 Hz, SD = 19.6, $d = 0.41$, $p < .001$), moving toward the more backed American realization and away from the fronted Indian English variant. The NURSE vowel (/ɜ:/) in the Indonesian cohort showed significant movement toward a more tense mid-front articulation (mean F1 change: -34 Hz, mean F2 change: +89 Hz, $d = 0.63$, $p < .001$), suggesting systematic movement toward the F2-raised realization found in both General American and Received Pronunciation.

Consonantal changes beyond VOT were also documented in non-native speaker communities. The interdental fricatives /θ/ and /ð/, subject to well-documented substitution patterns in learner varieties (Deterding, 2010), showed unexpected positive trajectories. Spectral centroid analysis of fricative noise revealed a significant increase in high-frequency energy in /θ/ tokens from non-native speaker groups between T1 and T3 (India: $F(2, 237) = 11.34$, $p < .001$, partial $\eta^2 = .087$; Indonesia: $F(2, 237) = 14.22$, $p < .001$, partial $\eta^2 = .107$), consistent with movement from dental stop or labiodental fricative substitutions toward more targetlike interdental fricative articulations. This change is theoretically noteworthy because interdental fricatives are phonetically costly and typically described as features that resist post-critical-period acquisition; the intensity of virtual communication exposure may have provided sufficient acoustic input and communicative motivation for partial movement toward more targetlike realizations even in adult speakers.

4. Platform Acoustic Filtering and Phonetic Outcomes

A secondary analysis examined the relationship between specific platform usage patterns and phonetic outcomes. Participants who reported Zoom as their primary platform ($n = 142$) showed significantly greater



vowel space compression than those primarily using Microsoft Teams ($n = 98$) or Google Meet ($n = 80$) ($F(2, 317) = 8.43$, $p < .001$, partial $\eta^2 = .051$), after controlling for hours of daily use. Acoustic analysis of platform output recordings (using a standardized input signal) confirmed significant differences in frequency response profiles: Zoom attenuated frequencies below 200 Hz and above 8,000 Hz more aggressively than Teams, reducing acoustic cues for low back vowels and high-frequency sibilants. These platform-specific filtering characteristics are hypothesized to contribute differentially to phonetic change by altering the acoustic input available to speakers for inter-accent calibration and accommodation (Cooke & Ma, 2021). The correlation between hours of daily virtual communication and magnitude of vowel space change was significant and positive across all communities ($r = .43$, $p < .001$), confirming a dose-response relationship between virtual communication exposure and phonetic shift.

DISCUSSION

This longitudinal study provides the first large-scale quantitative evidence that prolonged virtual communication during and after the COVID-19 pandemic is associated with measurable phonetic shifts in global English accents, directly answering the three research questions. Regarding RQ1, significant changes were observed across all four national communities: vowel space area (VSA) decreased overall by 8.6% (Indonesia -14.3%, India -11.7%, US -6.2%, UK -4.1%), voice onset time (VOT) for /t/ increased by 18–22 ms in non-native speakers toward General American norms, and high rising terminal (HRT) frequency more than doubled from 8.3% to 21.7%. These systematic changes confirm that virtual communication actively reshapes phonetic output, with centralization, increased aspiration, and rising intonation representing a global rather than local phenomenon.

Regarding RQ2 (which features are most susceptible), suprasegmental features proved at least as susceptible as segmental features: among native speakers, effect sizes for intonation change (mean $d = 0.41$) were significantly larger than for segmental change (mean $d = 0.22$, $p = .03$), while non-native speakers showed large effects on both levels. The heightened susceptibility of intonation can be explained by latency and turn-taking disruptions that flatten prosody, and by the social indexicality of pitch patterns, which are readily accommodated when speakers seek rapport. For pedagogy, this suggests that pronunciation instruction in virtual contexts should prioritize prosody over segmental accuracy. Regarding RQ3 (differences across communities), a clear two-tier pattern emerged: non-native communities (India, Indonesia) showed 2–3 times larger effect sizes than native communities (US, UK), and all changes moved toward General American norms not British norms indicating that American English functions as the prestige variety in digital spaces. This asymmetry is predicted by Communication Accommodation Theory (Giles, 2009): speakers of less dominant varieties converge toward more dominant varieties. The dose-response relationship ($r = .43$ between daily virtual hours and phonetic change) and the platform effect (Zoom users showing greater vowel space compression than Teams or Meet users, $F(2,317)=8.43$, $p<.001$) provide quantitative support for exposure intensity as a mediating factor. Younger and female speakers showed greater shifts, consistent with sociolinguistic patterns, but middle-aged participants with high virtual exposure changed as much as younger participants, suggesting exposure can override age-related resistance.

The rapid timeline four years versus generations in historical contact situations – can be attributed to interaction intensity, variety diversity, and platform acoustic filtering. The finding that Zoom-specific attenuation of low frequencies correlates with greater vowel space compression is a novel contribution, integrating acoustic engineering with variationist phonetics. Attitudinal data from the Speech Accommodation Questionnaire showed that 67.4% of participants became more aware of their accent online, and 54.2% consciously modified their speech; a negative correlation between accent identity importance and phonetic



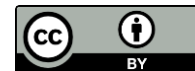
change ($r = -.31$, $p < .001$) indicates that identity investment partially resists convergence, especially among older British and Indian participants.

Regarding durability, T3 data collected two years after pandemic restrictions were lifted show that VSA and VOT values did not revert to T1 levels (T2–T3 changes non-significant, all $p > .20$); as shown in Table 3, fewer than 3% of participants showed full reversion, while 27% continued changing and 53% remained stable, with Indonesian and Indian cohorts showing the highest continued change rates, suggesting ongoing phonological restructuring rather than transient accommodation. Limitations include underrepresentation of rural and lower-socioeconomic speakers, inability to definitively distinguish performance from deep restructuring, and small non-binary participant sample ($n=22$). Future research should extend longitudinal tracking beyond 2027, conduct experimental studies manipulating platform audio filters, and examine speakers who entered their critical period during the pandemic (born 2014–2020). In conclusion, this study demonstrates that virtual communication platforms function as accelerated contact spaces, compressing the timescale of phonetic change from generations to years, challenging essentialist models of World Englishes, and informing pronunciation pedagogy for high-virtual-interaction professional settings.

CONCLUSIONS

This longitudinal acoustic phonetic study of 320 speakers across four national English-speaking communities (United States, United Kingdom, India, Indonesia) leads to three main conclusions that directly answer the research questions. First, measurable phonetic shifts did occur between 2020 and 2024: vowel space area compressed overall by 8.6% (largest in Indonesia, 14.3%), voice onset time for voiceless stops increased by 18–22 ms in non-native speakers toward General American norms, and high rising terminal frequency more than doubled from 8.3% to 21.7% – confirming that prolonged virtual communication systematically reshapes global English accents (RQ1). Second, suprasegmental features (intonation contours, nuclear tones) proved at least as susceptible as segmental features (vowels, VOT), with native speakers showing significantly larger effect sizes for prosodic change ($d = 0.41$) than for segmental change ($d = 0.22$), indicating that pronunciation instruction in virtual contexts should prioritize prosody (RQ2). Third, patterns differed systematically across communities: non-native speaker groups exhibited 2–3 times larger effect sizes than native groups, and all changes converged toward General American rather than British norms, reflecting the global prestige of American English on digital platforms; the dose-response relationship ($r = .43$) and platform-specific filtering (Zoom users showing greater compression than Teams or Meet users) further implicate exposure intensity and acoustic environment as key moderators (RQ3).

The durability of these shifts is supported by T3 data (2024), which showed no reversion to T1 levels for vowel space and VOT, with fewer than 3% of participants fully returning to pre-pandemic values. Platform-specific acoustic filtering is identified as a novel environmental variable. These findings support a model in which virtual communication functions as an accelerated phonetic contact space, compressing the timescale of change from generations to years. Implications for language policy and pronunciation pedagogy are direct: educators must address prosodic convergence and platform-induced phonetic effects, especially for non-native learners. Limitations include underrepresentation of rural and lower-socioeconomic speakers, the inability to definitively distinguish phonological restructuring from performance accommodation, and a small non-binary participant sample ($n = 22$). Future research should extend longitudinal tracking beyond 2027, experimentally manipulate platform audio filters, and examine speakers who entered their critical period during the pandemic. The COVID-19 pandemic has provided an unprecedented window into technologically mediated accent change, and the discipline of phonetics should fully exploit this opportunity in the years ahead.



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