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Accent bias and equity: implications for healthcare

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Healthcare delivery, particularly as it is provided through telephone triage presents unique challenges for research since it sits at the intersection of different disciplines with different research traditions and represents a safety critical domain. Sociolinguistics provides health communication with valuable insights, highlighting how language attitudes and biases, particularly towards non-standard or accented speech, affect judgments on credibility, intelligence, and likability. This is critical in medical contexts where, e.g., pain is self-reported verbally and underlying biases may influence care decisions. Unlike in-person consultations, telephone triage lacks visual and physical examination cues, relying heavily on acoustic information, which may amplify language-based biases. Researching language bias in healthcare is challenging, but sociolinguistic methods offer neutral research pathways to improve delivery. This mini-review explores the influence of language biases on health communication and patient care, outlines methodological approaches, and suggests interventions for addressing unconscious biases, with implications extending to healthcare equity and linguistic competence in medical education.

KEYWORDS

health communication, sociolinguistics, language attitudes, accent bias, telephone triage, healthcare equity

Introduction

Healthcare delivery, particularly through telephone triage, presents unique challenges that sit at the intersection of sociolinguistics and medical communication and represents a safety critical domain. Research within sociolinguistics has consistently shown that language attitudes, especially unconscious biases held towards non-standard or accented speech, significantly influence listeners' judgments regarding speakers' credibility, intelligence, and likability (Levon et al., 2021; Foucart et al., 2020; Bazzi et al., 2022). The implications of this research become particularly critical in medical contexts where symptoms are self-reported verbally, as perceived patient credibility can directly affect the accuracy of, for example, pain assessment by medical staff, ultimately impacting patient care decisions.

While traditional face-to-face medical consultations benefit from a multimodal assessment framework that incorporates visual cues, vital signs, and additional physical examinations, telephone triage and other forms of telemedicine present a more restricted environment where healthcare providers must rely almost exclusively on acoustic information. This restriction to the verbal mode may amplify the effects of language-based biases in medical assessment, as the absence of supplementary clinical data and nonverbal cues may further increase the emphasis placed on linguistic features in clinical decision-making (Chaiken and Maheswaran, 1994; Roskos-Ewoldsen et al., 2007). This mini-review aims to draw attention to this problem by giving a short overview of the core concepts and methods in this interdisciplinary area, highlighting potential risks and research gaps.

Understanding accent bias

Language attitudes refer to evaluative reactions individuals or societies have towards different language varieties which are not based on aesthetic or linguistic grounds (Dragojevic, 2015; Garrett, 2010; Lippi-Green, 2012). Rather, they constitute a form of social categorization using learned stereotypes about the specific social groups associated with the variety, even in the absence of other, for example visible identity markers (Fuertes et al., 2012; Milroy, 2001).

Multiple factors influence the effect language attitudes have on judgments, including familiarity with or exposure to an accent, the situational context provided, the level of expertise in the topic area discussed, expectations, processing fluency (how much effort is needed to process stimuli, effectively determining cognitive load), the social group of the listener, as well as the listener's motivation to control prejudiced responses (Lev-Ari et al., 2018; Baese-Berk et al., 2013; Boduch-Grabka and Lev-Ari, 2021; Cargile et al., 1994; Fuertes et al., 2012; Lev-Ari and Keysar, 2012).

Emotions may also play a significant role, as “emotions color the interpretation of the elements people consider in their decisions, even if those elements, on the face of it, have nothing to do with the emotion” (Dunning, 2012, p. 263). Further, research suggests that foreign-accented speech or linguistic varieties that are unlike our own can modulate emotionality, with evidence showing increased neural activation linked to hearing speech in one's own accent rather than a foreign or out-group one (Bestmeyer et al., 2015). The “remarkable resemblance to activations in response to pleasant music, vocal affect, and stimuli with increased behavioral relevance” when hearing one's own accent versus a foreign or out-group variety suggests deep-seated neurological foundations for accent preferences (Bestmeyer et al., 2015, p. 3957).

Sociolinguistic research on accent bias

The established sociolinguistic framework for understanding language attitudes and accent bias centers on prestige and solidarity dimensions, with prestige encompassing perceptions of speaker intelligence, competence, and social class, while solidarity includes aspects such as likeability, attractiveness, trustworthiness, and credibility (Fuertes et al., 2012). While perceived prestige can influence many social interactions, the solidarity—especially its subset credibility—dimension is likely to be more relevant in the health care setting. Not much research has been done for the medical context specifically, however, several studies over the past few decades have demonstrated that language attitudes can influence the perception of speakers' credibility, even in high-stakes settings such as education, hiring, politics, or criminal law (Garrett, 2010; Levon et al., 2020, 2021; Seligman et al., 1972; Hu, 2020; Dixon et al., 2002; Mitchell et al., 2005; Reinhard, 2007; Seggie, 1983). Contemporary research has also revealed that foreign-accented speech affects decision-making processes (Bazzi et al., 2022), with processing fluency playing a central role in (negative) bias toward foreign-accented speakers (Foucart et al., 2020).

The effect of language attitudes on speaker evaluations is not an altogether new discovery, Sharma et al.'s (2022) analysis, for example, demonstrates that accent bias has been documented for over 50 years in Great Britain, indicating the entrenched nature of these attitudes

and demonstrating their effect on social change and mobility (or lack thereof) [see also Fuertes et al. (2012) for an international meta-analysis of the effects of speakers' accents on interpersonal evaluations].

Established methodological approaches

Language attitude research employs both direct and indirect methodological approaches to capture different dimensions of linguistic bias. Direct approaches involve explicitly asking participants about their attitudes toward language varieties or accent labels, while indirect approaches aim to circumvent social desirability bias by using more subtle techniques.

The matched guise technique, an indirect method developed by Lambert et al. (1960), serves as an exemplar of language attitude research methods. “In the matched guise technique, the same speaker is used to create stimuli for two (or more) conditions. The two versions produced by the speaker are called guises. The idea is that, because the speaker is the same, any differences will be minimized” (Drager, 2018, p. 62–63). Participants believe they are evaluating different speakers, when in fact they are hearing the same person speaking in different ways, minimizing speaker-specific variation while isolating the effect of linguistic features.

The verbal guise technique represents a practical alternative where different speakers represent each language variety, useful when bidialectal speakers are unavailable or when investigating global linguistic differences. Modern research has also incorporated implicit measures such as the Implicit Association Test (IAT) and its variants, including the Personalized IAT (P-IAT) and Social Category Association Test (SCAT), which measure reaction times to reveal unconscious associations between linguistic varieties and evaluative categories (Pantos and Perkins, 2012; Drager, 2018).

As Plant and Devine (1998) note, “when expressing their level of [...] prejudice, some individuals are more strongly affected by features of the social context than are others” (p. 812), highlighting the importance of measuring both direct explicit and implicit indirect attitudes to understand the full scope of bias effects.

Healthcare context and vulnerability

The healthcare system's vulnerability to various forms of bias has been well-established, with structural inequalities and biased interactions based on gender, ethnicity, age, and socioeconomic status having been shown to have detrimental effects on patients' health outcomes (Viswanath et al., 2021; Williams et al., 2019; Braveman et al., 2011; Zhu and Smith, 2021). As linguistic markers constitute similarly public and involuntary tokens of an individual's group membership as the ones named above, it makes them equally susceptible to bias effects.

In fact, healthcare delivery presents unique vulnerabilities to linguistic bias, particularly in telephone-mediated contexts. As Roscoe et al. (2016) observed, triage decision-making traditionally relies on “three sources of information: visual (observations of the patient's appearance and behavior), vital (information from initial clinical tests like temperature and blood pressure), and verbal (the patient's story of the reason for their visit)” (pp. 1158). Telephone triage eliminates visual and vital information sources, placing

disproportionate emphasis on verbal communication. An additional risk factor is added when non-medically trained staff like receptionists in general practitioners' offices "engage in clinical decisions they are not trained to make," such as is often the case in preliminary triage for the sake of appointment allotment (Sikveland and Stokoe, 2020: 273).

Cognitive biases such as diagnostic suspicion bias and availability bias further compound these challenges, with the reduction of complex situations to simplified decision points creating substantial potential for judgment errors based on subconscious bias (Banerjee et al., 2017; Banerjee and Nunan, 2019; Dunning, 2012; Hilton and Jeong, 2019).

Pain assessment represents a particularly vulnerable domain. Pain is frequently the most salient symptom and the reason people seek out medical assistance in the first place, yet it remains subjective and not truly quantifiable (International Association for the Study of Pain, 2020; Morone and Weiner, 2013). The 'unpleasant subjective emotional experiencing of pain' (Vallath et al., 2013) creates inherent challenges in standardized assessment, making pain evaluation inherently vulnerable to the influence of personal biases such as language attitudes.

The expansion of telehealth services, particularly since the COVID-19 pandemic, has intensified these vulnerabilities. Non-emergency clinical advice and triage services, such as NHS111 in the UK or "Gesundheitstelefon 1450" in Austria, have become increasingly relied upon (Bundesministerium für Soziales, Gesundheit, Pflege und Konsumentenschutz, 2022; Graversen et al., 2020; Sangar and Middleton, 2020). Even long before the pandemic, a "significant proportion of the contacts which medical practitioners [had] with their patients occur[ed] over the telephone. One study [from 1995] reports that approximately 15 percent of all ambulatory medical contacts in the US are made over the telephone" (Drew, 2006, p. 416). Due to staff shortages and the resulting necessity to prioritize and rank patients' needs by urgency, the reliance on such services is likely to remain integral to healthcare delivery for years to come.

Evidence of language bias in healthcare

Despite the obvious importance of equitable healthcare delivery, evidence suggests that the influence of language attitudes does not halt in medical contexts, with similar patterns emerging as in other high stakes settings. For instance, Baquiran and Nicoladis (2020) found that patients evaluate the professional competence of a fully trained doctor with a non-native accent as less than that of a standard accented and equally qualified doctor. This demonstrates that even in settings where expertise and professional competence are literally of vital importance, subconscious attitudes and biases towards speakers of certain varieties influence judgment. Similarly, Swift et al. (2015) demonstrated the influence of accent on perceived therapist credibility in mental health contexts.

However, research specifically focusing on language attitudes in healthcare contexts remains limited compared to other domains. The existing studies primarily focus on provider accents rather than patient accents, and few examine the specific dynamics of telephone-mediated healthcare delivery. This represents a significant gap given the increasing reliance on telehealth services and the critical nature of healthcare decision-making.

Methodological considerations for healthcare research

Adapting sociolinguistic methodologies to healthcare contexts presents unique challenges. The face-threatening nature of conducting bias research in healthcare settings creates particular difficulties, as healthcare providers may be resistant to acknowledging potential bias given their professional commitment to providing equitable care. Sociolinguistic methods offer a neutral way to conduct research in safety critical domains such as telephone triage.

The verbal guise technique proves particularly suitable for healthcare research, as it allows for systematic manipulation of accent while controlling other variables. Research incorporating additional measures such as the Plant and Devine (1998) "Internal and External Motivation to Respond Without Prejudice" scale can help identify individual differences in susceptibility to bias effects. Linear mixed models provide robust analytical frameworks for examining the complex interactions between accent, context, participant characteristics, and healthcare outcomes, as well as other potentially relevant factors such as mood.

Conversation analysis offers additional methodological advantages when applied to real-world examples, as it provides a well-established methodology for detailed analysis of recorded interactions which has been widely applied in the healthcare context (Barnes, 2019; Heritage and Maynard, 2006; Sikveland and Stokoe, 2020; Drew et al., 2001). Conversation analysis techniques have "successfully identified a wide range of communication practices and dilemmas recurrent in medical encounters and that have substantive effects on communication and outcomes" (Murdoch et al., 2015, pp. 37–38). While conversation analysis has made substantial contributions at the intersection of linguistics and healthcare communication possible, it has so far not been used to explore language attitude effects per se, as its focus is on the analysis of naturally occurring language in which individual linguistic characteristics of speakers, such as accent, cannot easily be isolated or controlled for.

The integration of multiple methodological approaches—combining experimental techniques with naturalistic observation—offers the most comprehensive understanding of accent bias effects in healthcare contexts. However, researchers must balance methodological rigor with ethical considerations, particularly regarding potential harms to vulnerable patient populations.

Implications and outcomes

Empirical evidence demonstrates that accent bias effects persist even in medical contexts. Research findings indicate that context influences effects of accent bias with different accents being rated differently in medical versus neutral contexts, yet a high-stakes medical context does not eliminate the influence of accent bias. These effects vary by participant characteristics, including gender and internal motivation to respond without prejudice, suggesting that individual differences moderate bias effects (Roth, 2025).

The implications of language attitudes in the healthcare context extend beyond individual patient encounters to broader healthcare equity concerns. If accent bias influences pain assessment accuracy, this could systematically disadvantage patients with certain linguistic backgrounds, potentially leading to under-treatment of pain and delayed care for vulnerable populations. Such effects could

exacerbate existing health disparities and undermine the fundamental principle of equitable healthcare delivery.

Serious adverse events represent the most concerning potential outcome, as they are “unintended or unexpected event[s] related to the quality of care and resulting in death or a severe harmful event for the patient” (Erkelens et al., 2019, p. 5). If accent bias influences triage decisions, it could contribute to inappropriate prioritization of cases, potentially leading to delayed treatment for time-sensitive conditions.

The emotional dimensions of healthcare encounters may further amplify these effects. If, for example, foreign-accented speech modulates emotionality and affects “decisions with an emotional component” (Bazzi et al., 2022, p. 16), this could create additional barriers to effective patient-provider communication in already stressful healthcare contexts.

Training and intervention strategies

Evidence from employment contexts suggests that accent bias can be mitigated through targeted interventions. Levon et al. (2020), for instance, demonstrated that brief training programs combining information provision, awareness raising, and actionable strategies proved effective in reducing accent bias in hiring decisions. Work such as the one by Levon et al. might be used to provide a model for potential healthcare applications.

Educational components should emphasize understanding accent as a natural result of any social background that is difficult to change, represents part of (social) identity, and is irrelevant regarding competence or credibility. Such training could be integrated into medical education curricula and continuing professional development programs for healthcare workers. As Byrne and Tanesini (2015) point out, health care interactions demand a very high cognitive load of the medical staff, so adding the demand of consciously inhibiting stereotype activation might have less, and possibly even negative, overall short-term effects on clinical judgment than in other domains such as job interviews. Consistent long-term implementation of educational measures with the aim of habituating positive egalitarian goals and replacing stereotyping associations over time is therefore paramount for bias avoidance to become automatic and not pose an additional cognitive burden.

Despite the many challenges in reducing unconscious bias in high-pressure time-sensitive health care encounters, increasing health care providers' motivation to reduce accent bias nevertheless promises to be a beneficial step towards health equity and is true for any level of verbal medical communication, from (non-) emergency telephone triage to face-to-face health service encounters.

The connection between accent bias and broader social mobility issues (Blanden et al., 2004; Social Mobility Commission, 2022) further suggests that addressing linguistic bias in healthcare represents part of a larger social justice agenda. Healthcare systems have both ethical obligations and practical incentives to ensure equitable care delivery, making bias reduction training potentially valuable for both patient outcomes and organizational goals.

However, the implementation of such training must be sensitive to the professional identity and expertise of healthcare providers. Rather than implying deficiency in clinical judgment, training should frame bias awareness as enhancing existing clinical skills and supporting professional values of equitable care delivery.

Future research directions and interdisciplinary challenges

The interdisciplinary nature of this type of research presents both opportunities and challenges: Healthcare contexts require understanding of medical decision-making processes, clinical communication patterns, and patient safety considerations, while sociolinguistic expertise is necessary for understanding accent bias mechanisms and developing appropriate methodological approaches. As these different areas of expertise and focus are rarely combined in a single researcher, interdisciplinary teams and collaborations are of essence.

Interdisciplinary collaboration faces several obstacles, however, such as the disciplines of medical and sociolinguistics backgrounds employing different research paradigms and methods. While medical research emphasizes clinical outcomes and population health, sociolinguistic research focuses on language variation and social meaning. Reconciling these different approaches requires careful attention to shared goals and complementary methodological strengths but is paramount to productive interdisciplinary collaboration and optimal serviceable output.

The safety critical yet face-threatening nature of bias research in healthcare contexts creates additional challenges, such as healthcare providers being potentially resistant to participating in research and intervention strategies that suggest possible bias in their clinical decision-making. Therefore, researchers must develop approaches that are both scientifically rigorous and professionally sensitive, requiring extensive consultation with healthcare professionals and ethics committees.

Future research should examine the specific mechanisms through which accent bias influences different types of healthcare encounters, investigate the effectiveness of various intervention strategies, and develop standardized protocols for bias reduction training in healthcare settings. Longitudinal studies examining the persistence of training effects and their impact on patient outcomes would provide crucial evidence for policy and practice recommendations.

Conclusion

The presented evidence clearly demonstrates that accent bias represents a significant threat to equitable healthcare delivery, particularly in telephone-mediated contexts where linguistic cues become disproportionately important. While the challenges of conducting interdisciplinary research in this sensitive domain are substantial, the potential benefits for patient care and healthcare equity make this research essential.

Sociolinguistic methods offer valuable tools for understanding and addressing accent biases in healthcare, with distinct advantages and opportunities. While invaluable for understanding situated practice and interactional behaviors, observational research methods commonly found in health communication research can present a challenge for studying face threatening topics such as accent bias, racism or gender bias. This is not only because they are face threatening, but also because people are more likely to modify or monitor their behavior when being observed. In these scenarios, sociolinguistic methods are less face-threatening because they abstract from individual interactions to identify general patterns through

quantitative data. This methodology aligns well with evidence-based practices already familiar to medical professionals, facilitating smoother integration and collaboration across disciplines. When carefully adapted to healthcare contexts, these intervention strategies could significantly improve the quality and equity of healthcare delivery, particularly as telehealth services continue to expand and accent-related communication challenges become increasingly prominent in remote consultations.

Addressing linguistic bias in healthcare ultimately serves both individual patient needs and broader social justice goals. By ensuring that linguistic background does not influence the quality of care received, healthcare systems can better fulfill their fundamental obligation to provide equitable, effective care to all patients regardless of their accent or linguistic background.

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