

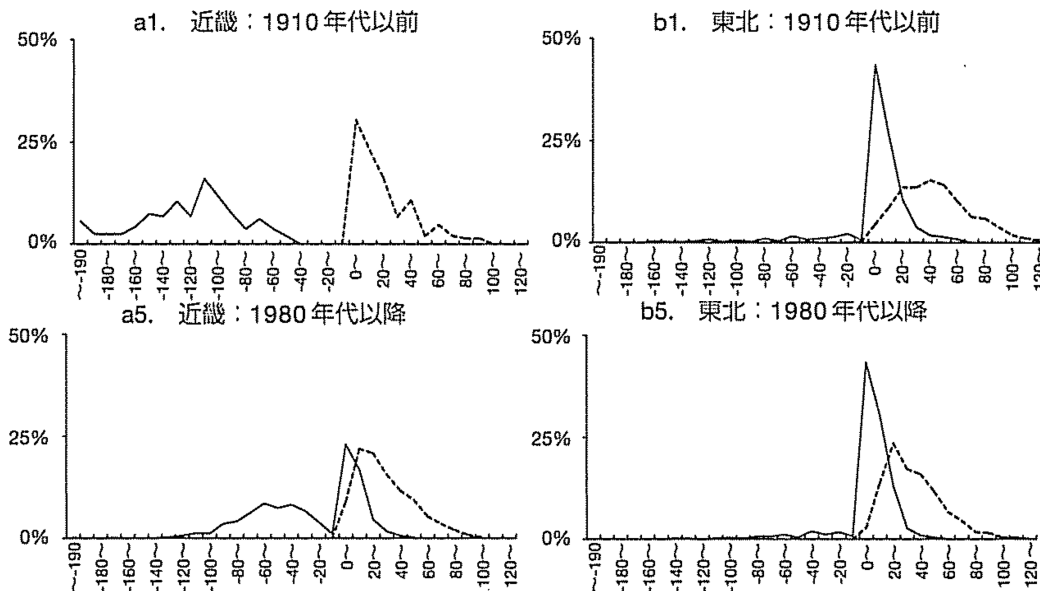
## The emergence of a register system from the word-initial voicing contrast in Japanese

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Japanese is usually described as contrasting voiced /b, d, g/ to voiceless /p, t, k/ word-initially and medially. In Old Japanese, however, the voiced stops are attested only medially, and initial /b, d, g/ developed later from the loss of initial vowels, as in (1), as well as from the influx of loanwords with voiced stops from Middle Chinese, as in (2).

- (1) \*i<sup>ndaku</sup> > [daku] ‘embrace’                      (2) [budo:] ‘grape’    (cf. Shànghǎi [bu<sup>1</sup>dɔ<sup>5</sup>])

As (1) shows, the voiced stops in native forms are reconstructed as being prenasalized. The philological evidence for prenasalization is augmented by variation in transcribed reflexes of medial /b, d, g/ across modern dialects. Takada (2011) provides instrumental evidence that word-initial voiced stops also varied across modern dialects until recently, as illustrated in (3). Whereas panel a1 shows that older Kinki speakers contrast a voiced series (with a pronounced voicing lead) to a voiceless unaspirated series (lag VOT with a mode around 5 ms), panel b1 shows that older Tôhoku speakers contrast a ‘de-voiced’ series (mostly short lag values) with a mostly aspirated series (VOT lag with a mode around 50 ms). Panels a5 and b5 suggest further that sound changes are in progress such that both the “true” voicing contrast of the Kinki dialects and the lag VOT contrast of the Tôhoku dialects are converging toward a system where VOT no longer functions as the primary cue. Other data in Takada (2011) suggest that Tokyo speakers pattern like Kinki speakers, except that the sound change is further advanced, so that a historic voicing contrast seems to be being replaced by a “register” difference in the standard variety. In this paper, we will report data from several studies using Tokyo dialect speakers that offer further support for this interpretation of Takada’s (2011) VOT data as evidence of the emergence of a register system in modern standard Japanese.



(3) VOT (ms) in word-initial voiced stops (solid lines) versus voiceless stops (dashed lines) in productions by Kinki speakers (left) versus Tôhoku speakers (right) who were born around 1910 (top) versus born around 1980 (bottom).