Talkers participated in two recording sessions. Within a session a set of three speaking tasks were performed and repeated four times per test session:
1. The Rainbow Passage (Fairbanks, 1960)
2. A list of 110 sentences
   a) 50 "vowel sentences" (bVd/ in neutral context; 5 tokens each of 10 vowels)
   b) 6 lists from the Hearing In Noise Test (HINT; Nilsson et al., 1994)
3. A picture description task
   Although the speaking task order was fixed for the four repetitions, the sentences were in a different order and a different picture was used each time.
   Recordings were made in a quiet, sound-treated room using a headset microphone (Shure SM-10) and a Marantz PMD 670 digital recorder.
   In both sessions, talkers were given speaking style instructions (Ferguson, 2004) and a list of 15 practice repetitions, the sentences were in a different order and a different picture was used each time.
   For each acoustic metric, a two-way repeated measures ANOVA was carried out using SPSS to test the main effects of and interactions between speaking style (clear vs. conversational) and task set (1 vs. 4).

Vowel space: The main effects of speaking style and task set were significant [F(1,9) = 9.172 and 7.581 respectively, p<.04]; the interaction between the two effects was not [F(1,9) = 2.625, p=.14].

Speaking rate: The main effect of speaking style was significant [F(1,9) = 14.66, p<.005]; the task set effect was not [F(1,9) = 0.38, p=.55]. The interaction just missed significance [F(1,9) = 4.88, p=.054].

Vowel range: The main effects of speaking style and task set were significant [F(1,9) = 2.846, 2.040, and 0.6, respectively, p>.10].

Speaking rate: The main effect of speaking style was significant [F(1,9) = 13.15, p<.01]; the main effect of speaking style and the interaction were not [F(1,9) = 2.192 and .506 respectively, p>.17].

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| Talkers were recruited from the University of Utah Department of Psychology participant pool. A total of 19 talkers (11 males) were recorded. A subset of 10 talkers aged 18 to 24 (5 males) were selected for the present analyses. These talkers completed both recording sessions and met the following criteria by self-report: They had normal hearing and no history of speech or language disorders. They had grown up in Utah and affirmed that "I talk like I'm from around here."

For each talker, four measures were taken from the 1st & 4th repetitions of the speaking task set in each style:
1. Vowel space perimeter in Barks: The sum of four Euclidean distances between steady-state F1 & F2 values for the vowels /a/, /æ/, /i/, and /u/. For each task set and vowel, F1 and F2 were extracted from the second, third, and fourth productions of individual vowel sentences using Praat and then averaged.
2. Rainbow Passage Speaking rate in syllables per second: duration of passage divided by # syllables. Two pitch measures were estimated from the Rainbow Passage using AudSwipePrime (Camacho, 2012):
   a) Median voice pitch in Hz.
   b) Pitch range in Hz: The difference between the 25th and 75th quartiles.

Assistance with transcription, acoustic analyses, and data entry was provided by Hannah Jones, Sadie Schilaty, Tyler José DaCosta Durães, Leah Booz, and Miranda Kofford at the U of U and Russell Banks, Lauren Glowski, Allison Woodberg, and Amy Kemp at MSU. Research was supported by the National Institute On Deafness And Other Communication Disorders of the National Institutes of Health under Award Number R01DC012315. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

References: