Objectives: Th a h a (IM) b a IM b (SRM). IM SRM. H

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co ld be direc l mea red. To do o, li tener ' percep ion of a e of ke ord con ti t ing a meaningf l command a e al - ated hen pre en ted toge her i h a compe ing peech ma ker of the ame form a the targe (ing the CRM corp ; Bolia e al. 2000). To e al ate the dele erio effec of IM on per- formance, Br ngan e ti ma ed the peci c con rib tion of EM b comparing re l to tho e ing a peech- haped noi e

that, in the itching dichotic condition, listener tried to partially track the target across it change of lateralization within the equence. This a possible at lo, but not rapid, itching rate. In fact, in the rapidl itching dichotic condition, performance a comparable to that ob er ed in a dictic baeline, hich helped to con rm that there a negligible EM in the dictic ta k.

The aim of the pre ent t d a to e al ate the informational component of peech-on- peech ma king b ing ambig o patial percept ind ced b pre enting im ltaneo dichotic tream that alternated the ear of pre entation. We h pothe i ed that itching tream across ear o ld re lt in ambig it in the patial lateralization of peech tream. The re lting tim li ho ld ha e little EM, b t high IM, ince the competing tream o ld be percei ed at imilar, ambig o location, leading to interference on the peech perception ta k. On the ba i of o r pre io ork, e predicted that performance in the itching condition o ld be igni cantl poorer than in a non itching dichotic condition, here the clear perceptual patial eparation of the competing tream red ce the amo nt of IM ind ced b the interfering tream. Additionall, e h pothe i ed that if performance on the itching condition approached that of the dictic condition, it o ld gge t that there a minimal EM in the dictic condition, and con rm that patial ambig it red ce SRM from IM. In addition to the e three conditions (dichotic, dictic, and itching), performance a mea red in a q iet condition to en re that the target a a dible in the ab ence of ma ker.

We e pected fact or of itching rate and ignal coherence to in ence the amo nt of IM ob er ed (for a re ie , ee Shamma et al. 2011); therefore, t o parameter ere aried in the itching condition. Fir t, iche ere de igned to appear either at ord bo ndarie or at a fa ter periodic rate. S iche occ rring d ring ilent inter al of the target tream (i.e., at ke ord bo ndarie) ere tho ght to minimi e interr ption in the peech eq ence. Ho e er, the ere relati el far apart in time, hich might limit their effect in red cing SRM. Indeed, in non peech eq ence, fa ter iche led to increa ed le el of IM (Calc et al. 2015). Increa ing the itching rate in the periodicall itching condition ho ld not onl lead to greater patial ambig it b t ill al o introd ce iche ithin ord, hich e f rther e pected to broaden patial percept. Both of the e effect ho ld lead to greater IM than hen itching at ord bo ndarie. Second, hort ilent gap ere in erted in the tream after lateralization iche, hich a e pected to decrea e cont in it of the tream, increa ing IM. The e t o manip lation ielded fo r itching condition : all combination of ord bo ndar or periodic iche, ith or itho t ilent gap.

MATERIALS AND METHODS

Participants

Se enteen o ng normal-hearing participant (21 to 32 ear, 16 female) took part in hi t d. All participant ere monoling al American Engli h peaker and had normal hearing a indicated b a diometric thre hold ≤ 20 dB HL at octa e freq encie from 0.25 to 8 kH. St d proced re ere appro ed b the In iti tional Re ie Board at Nort h e tern Uni er it. All participant pro ided informed con ent and ere paid for their participation.

Speech Recognition Task

Materials SRT ere mea red in re pon e to IEEE entence (Rothauer et al. 1969) prod ced b a female talker (a erage F0: 256 H) in the pre ence of a competing male talker (a erage F0: 124 H). The target IEEE entence contained e ke ord each. The competing peech al o con i ted of IEEE entence from a different b et of entence to en re that each entence a onl pre ented to the li tener once, either a a target or a ma ker. Both talker ere American Engli h peaker.

The ma ker a pre ented for the d ration of the target entence, ith the on et of the target and t of* [(tion id d ration o c1969) pro

IM in children aged 4 to 16 ear than in ad lt (Wightman & Ki tler 2005). Thi dif c lt might tem from immat re tream egregation mechani m , hich ha e been ho n to de elop o er time (S man et al. 2007). Gi en the cr cial role of attention on treaming of a dit or objec (Wood & McDermott 2015), and the e iting e idence that peed and ef cienc of attention allocation de elop be ond the age of 12 ear (Gome et al. 2007), f rther re earch i needed to e plore de elopmental effec of a dit or attention and tream egregation on peech-on- peech performance in children, and their interpla in ad lt .

In the ca e of older ad lt , cogniti e impairment might acco nt for a igni cant propor ion of the peech-on- peech dif c lie (F llgrabe et al. 2015). Con i tent ith thi po i-bilit , peci c dif c lie in it ation ma imi ing IM compared to it ation ma imi ing EM/MM ha e been repor ed in normal-hearing older ad lt (Schoof & Ro en 2014). Thi ma be rela ed to older ad lt ' red ced le ical inhibi ion

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