VIRTUAL

P&P Technical Committee Meeting

May 13, 2020

Chair: Frederick J. Gallun

Oregon Health & Science University

gallunf@ohsu.edu

Agenda

- Plenary Videos
- P&P Members Serving the Society
- Medals and Awards
- Effects of COVID-19 on Acoustics
- Chicago Meeting
- Upcoming Meetings
- Standards Update
- JASA Update

Plenary Videos

Greetings and Update
President Victor Sparrow
https://youtu.be/fBFcWT7hTRQ

Message From
Vice President
Peggy Nelson
https://youtu.be/zBeOj_LEypM

Planning for the Future
President-Elect Diane Kewley Port
https://youtu.be/8ITdouKc30A

Technical Committee Members

Term 2017 - 2020

Joshua Bernstein
Emily Buss
Hari Bharadwaj
Monita Chatterjee
Ross Maddox
Christopher Shera
Christian Stilp

Term 2018 - 2021

Michael Akeroyd
Anna Diedesch
Richard Freyman
Antje Ihlefeld
Alan Kan
Elin Roverud

Term 2019 – 2022

Douglas Brungart
David Eddins
Ruth Litovsky
Virginia Richards
G. Christopher Stecker
Kelly Whiteford

Term 2020 – 2023

Magdalena Wojtczak
Pavel Zahorik
Yi Shen
Erol Ozmeral
Jungmee Lee
Deniz Baskent

Please vote for the new members using the Survey Monkey link!
https://www.surveymonkey.com/r/QTDZQ3J

ASA

P&P Members Serving ASA Leadership

Diane Kewley-Port: President-Elect
Peggy Nelson: Vice-President
Judy Dubno: Treasurer
Brian C.J. Moore: Executive Council
Elizabeth Strickland: Membership (Chair)
William Hartmann: Rules and Governance (Chair)

PP TC CHAIR 2020-2023:
Virginia Best

Ex officio:

Lori Leibold, P&P member of Membership Committee
Andrew J. Oxenham, P&P member of the Medals and Awards Committee
Daniel Guest, P&P member of Student Council
Skyler G. Jennings, P&P member of ASACOS

Associate Editors

Journal of the Acoustical Society of America

G. Christopher Stecker (P&P Coordinating Editor)

Physiological Acoustics

Hari M. Bharadwaj
Philip X. Joris
Colleen G. Le Prell
Christopher A. Shera
Sarah Verhulst

Psychological Acoustics

Joshua G. W. Bernstein
Leslie R. Bernstein
Jonas Braasch
Mathias Dietz
Matthew J. Goupell
Karen S. Helfer

JASA Express Letters

Physiological Acoustics

Christopher Bergevin
Brenda L. Lonsbury-Martin

Psychological Acoustics

Monita Chatterjee
Quan-Jie Fu

Proceedings of Meetings on Acoustics

Psychological and Physiological Acoustics

Harisadhan Patra

Medals and Awards

Gold Medal – Judy R. Dubno

William and Christine Hartmann Prize in Auditory Neuroscience – Edwin R. Rubel

P&P TC Pick for JASA June 2020

Using spatial release from masking to estimate the magnitude of the familiar-voice intelligibility benefit

Ysabel Domingo; Emma Holmes; Ewan Macpherson; Ingrid S. Johnsrude;

The Journal of the Acoustical Society of America **146,** 3487-3494 (2019)
https://doi.org/10.1121/1.5133628

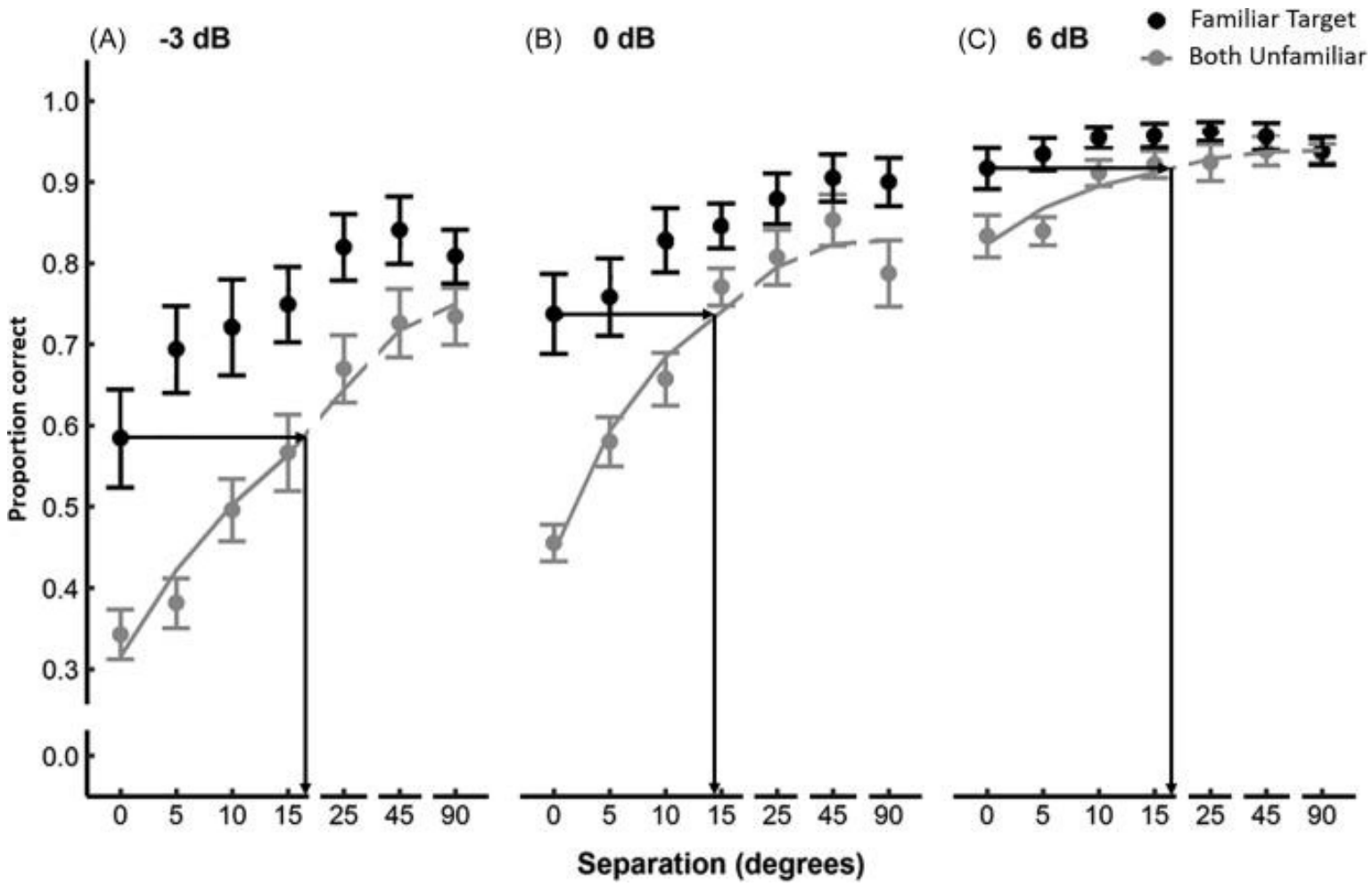


FIG. 2. Proportion of correct words as a function of spatial separation at -3 dB (A), 0 dB (B), and 6 dB (C) TMR. The markers represent averaged raw speech intelligibility data in the FT (black) or BU (grey) condition. The line is the exponential functions fitted to the raw data in the BU condition. The black arrows show the spatial separation on the BU function that has equivalent intelligibility to the FT condition at 0°. Error bars are ±1 standard error of the mean.

Effects of COVID-19 on Acoustics

- JASA Special Issue
- ASA Meetings
  - Cancelled meetings (more details on next slide)
  - The need for virtual meetings
  - The need for events to keep members engaged between meetings
  - Creating a P&P List for staying connected
- P&P Task Force on Remote Research
- Advocacy for Science

Upcoming Meetings

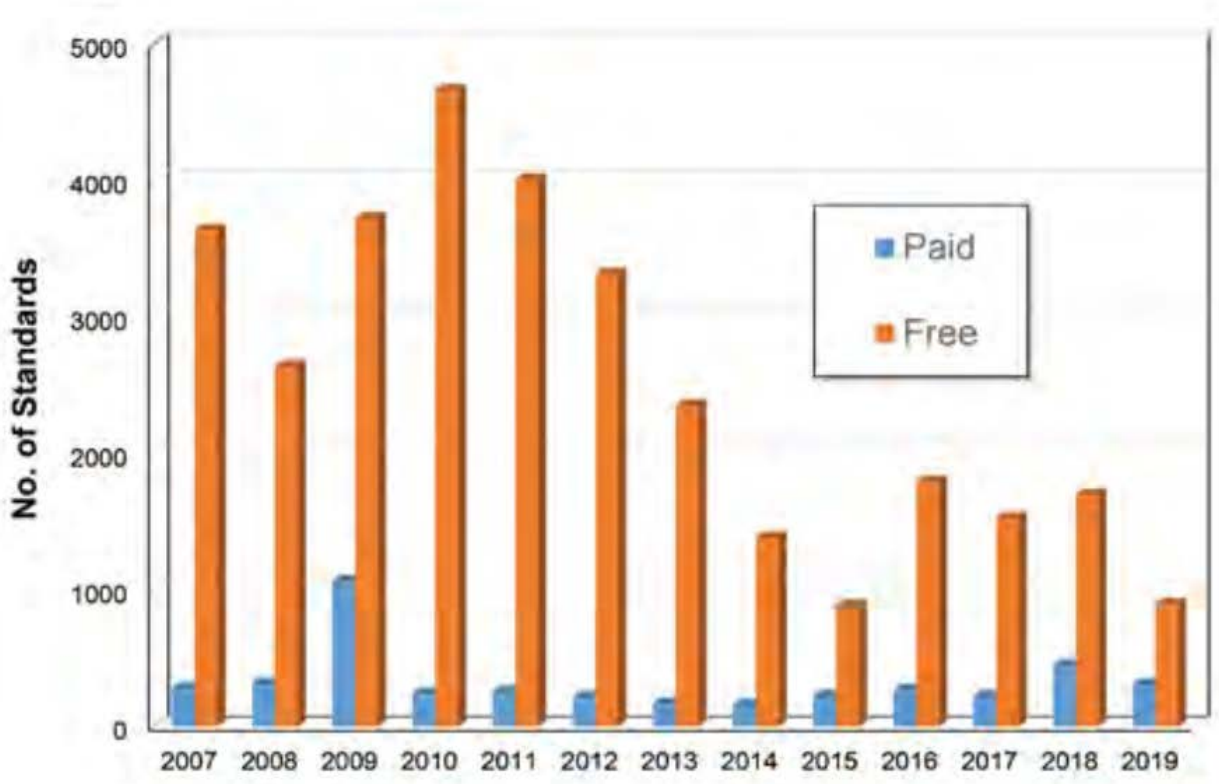
- Cancun Fall 2020 – Cancelled
- Chicago December 2020 – In Person? Virtual? Hybrid?
  - Call for papers will go out in July
  - Hartmann Lecture by Ed Rubel will most likely be postponed until Spring 2021
  - Special Session: Honoring William Yost's Contributions to Psychological Acoustics
  - Please fill out questions on the SurveyMonkey questionnaire: **https://www.surveymonkey.com/r/QTDZQ3J**

Upcoming Meetings

- Spring 2021 - Seattle
  - Four Special Sessions rescheduled from Chicago:
    - Machine Learning Approaches to Understanding Auditory Processing and Perception
    - Age-related changes in mechanisms of speech perception
    - Acoustics Outreach to Student Scientists in Clinical and Physiological Research
    - Top-down influences on auditory processing
  - Other Sessions? Deadline is Friday, May 15
  - There will be an ASA School at Seattle June 2021 ASA Meeting (link on main ASA page), for students and people within **4** years of their terminal degree
- Fall 2021 Sydney
  - up to 100 $1000 stipends for students, based on unused TC funds
  - Please start working with colleagues in Australia and Asia to create Special Sessions

ASA Standards

Cost of Standards Program: $575k/year
Cost covered by sales of standards: 75%



ASA Standards

- **ASA Standards moved to a “pay for service” business model 1 January 2020**
  - New pricing, topic bundles, quantity discounts, elimination of free standards, renegotiation of all site licenses and contracts with resellers


ASA
ACOUSTICAL SOCIETY OF AMERICA

AMERICAN NATIONAL STANDARD

Design Response of Weighting Networks for Acoustical Measurements

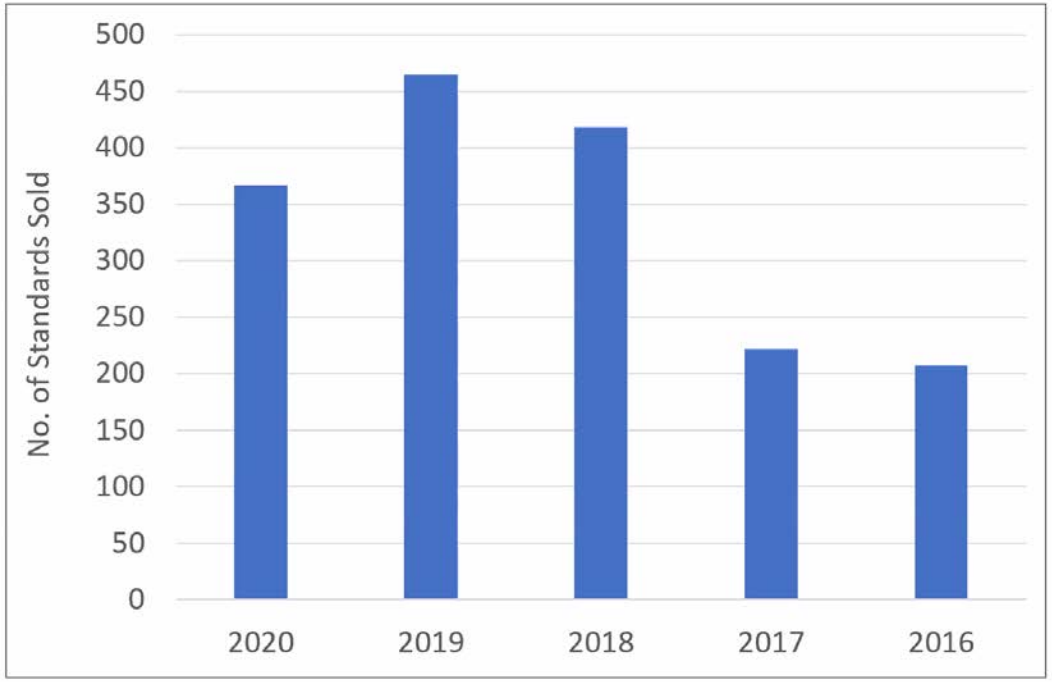
Secretariat:
Acoustical Society of America

Approved on 21 February 2020 by American National Standards Institute, Inc.

Abstract

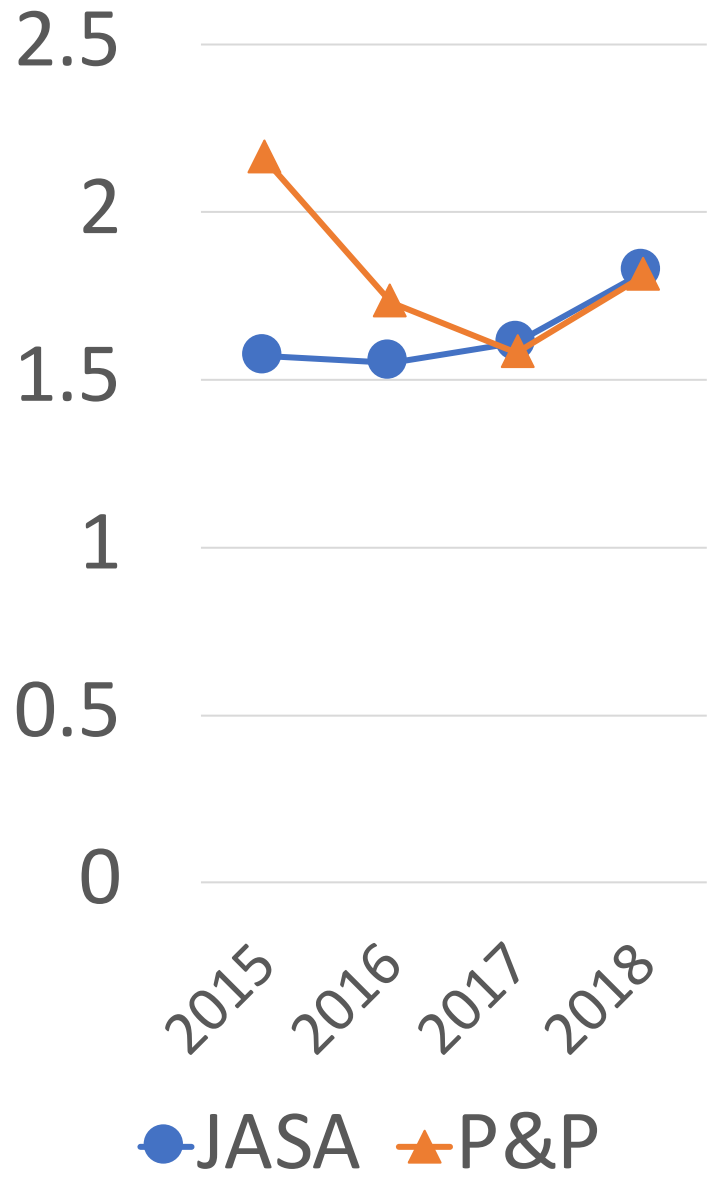
This standard provides design information for the A-, B-, C-, D-, E-, G-, and U-weighting networks used for acoustical measurements. The analog poles and zeros for each weighting network are given, along with the equations for computing the magnitude and phase responses as functions of frequency. Coefficients and equations for computing the impulse and step responses of the A-, B-, C-, D-, and E-weighting networks as functions of time are provided in an informative annex. Information regarding digital implementation is also provided in an informative annex. Matlab scripts for the design of analog and digital implementations of the weighting networks described in this standard are also supplied.

https://acousticstoday.org/a-sustainable-and-fiscally-responsible-business-model-for-the-acoustical-society-of-america-standards-program-christopher-j-struck/



Impact Factor

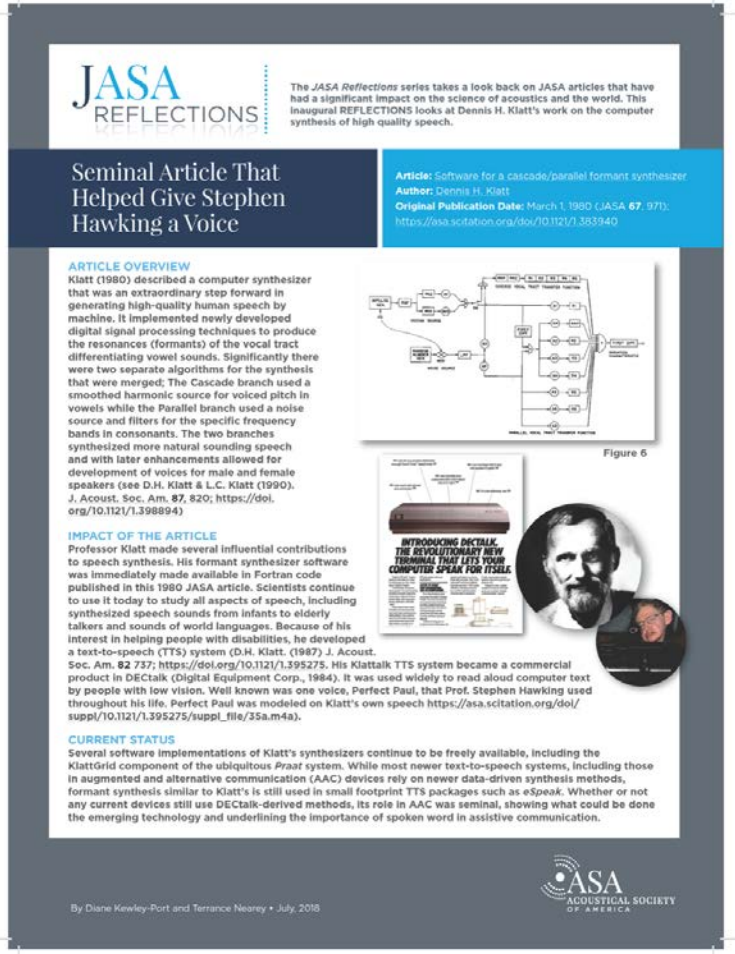
	JASA	P&P
2015	1.57	2.16
2016	1.55	1.73
2017	1.61	1.58
2018	1.82	1.81



• ARCH AC	2015 - 1.66 (51)	2016 - 1.51 (49)	2017 - 1.23 (52)	2018 - 1.44 (46)
• ANIM BIO	2015 - 1.85 (51)	2016 - 1.65 (82)	2017 - 1.68 (112)	2018 - 1.27 (113)
• AC OCEAN	2015 - 0.88 (9)	2016 - 1.50 (8)	2017 - 1.68 (22)	2018 - 1.0 (27)
• BIOMED	2015 - 2.1 (84)	2016 - 1.86 (59)	2017 - 1.75 (63)	2018 - 1.88 (66)
• ENG'G	2015 - 1.52 (42)	2016 - 0.70 (40)	2017 - 1.29 (55)	2018 - 1.70 (73)
• MUSIC	2015 - 1.50 (40)	2016 - 1.00 (37)	2017 - 0.79 (38)	2018 - 1.2 (46)
• NOISE	2015 - 1.76 (51)	2016 - 1.44 (50)	2017 - 1.95 (41)	2018 - 1.85 (39)
• PHYS	2015 - 1.68 (208)	2016 - 1.95 (118)	2017 - 1.69 (159)	2018 - 1.80 (162)
• P&P	2015 - 2.16 (206)	2016 - 1.73 (199)	2017 - 1.58 (205)	2018 - 1.81 (214)
• SIG PROC	2015 - 1.94 (88)	2016 - 1.88 (86)	2017 - 1.91 (88)	2018 - 2.16 (106)
• SPEECH	2015 - 1.66 (203)	2016 - 1.39 (185)	2017 - 1.69 (179)	2018 - 1.93 (174)
• STRUCT	2015 - 1.70 (57)	2016 - 2.27 (59)	2017 - 1.49 (71)	2018 - 1.71 (78)
• UW AC	2015 - 1.14 (120)	2016 - 1.35 (98)	2017 - 1.44 (95)	2018 - 1.52 (87)

Reflections

- Will be a new monthly feature, and extend over the next decade (until 2029)
  - Then will compile for a printed collection in 2029
- Is a 1-2 page description of a “classic” (seminal) article in the areas of our technical committees up to 2000 (but exceptions can be made if newer articles have dramatically changed a field)
- We have at least a couple of classic paper recommendations from each TC. We still would like a full list of 5-10 classic papers from all TCs, so that we have a fair representation
- We are at the starting point – should have first articles coming out soon.



JASA REFLECTIONS

The *JASA Reflections* series takes a look back on JASA articles that have had a significant impact on the science of acoustics and the world. This inaugural REFLECTIONS looks at Dennis H. Klatt's work on the computer synthesis of high quality speech.

Seminal Article That Helped Give Stephen Hawking a Voice

Article: Software for a cascade/parallel formant synthesizer
Author: Dennis H. Klatt
Original Publication Date: March 1, 1980 (JASA **67**, 971); https://asa.scitation.org/doi/10.1121/1.383940

ARTICLE OVERVIEW

Klatt (1980) described a computer synthesizer that was an extraordinary step forward in generating high-quality human speech by machine. It implemented newly developed digital signal processing techniques to produce the resonances (formants) of the vocal tract differentiating vowel sounds. Significantly there were two separate algorithms for the synthesis that were merged; The Cascade branch used a smoothed harmonic source for voiced pitch in vowels while the Parallel branch used a noise source and filters for the specific frequency bands in consonants. The two branches synthesized more natural sounding speech and with later enhancements allowed for development of voices for male and female speakers (see D.H. Klatt & L.C. Klatt (1990). J. Acoust. Soc. Am. **87**, 820; https://doi.org/10.1121/1.398894)

Figure 6

IMPACT OF THE ARTICLE

Professor Klatt made several influential contributions to speech synthesis. His formant synthesizer software was immediately made available in Fortran code published in this 1980 JASA article. Scientists continue to use it today to study all aspects of speech, including synthesized speech sounds from infants to elderly talkers and sounds of world languages. Because of his interest in helping people with disabilities, he developed a text-to-speech (TTS) system (D.H. Klatt. (1987) J. Acoust. Soc. Am. **82** 737; https://doi.org/10.1121/1.395275. His Klattalk TTS system became a commercial product in DECtalk (Digital Equipment Corp., 1984). It was used widely to read aloud computer text by people with low vision. Well known was one voice, Perfect Paul, that Prof. Stephen Hawking used throughout his life. Perfect Paul was modeled on Klatt's own speech https://asa.scitation.org/doi/suppl/10.1121/1.395275/suppl_file/35a.m4a).

CURRENT STATUS

Several software implementations of Klatt's synthesizers continue to be freely available, including the KlattGrid component of the ubiquitous *Praat* system. While most newer text-to-speech systems, including those in augmented and alternative communication (AAC) devices rely on newer data-driven synthesis methods, formant synthesis similar to Klatt's is still used in small footprint TTS packages such as *eSpeak*. Whether or not any current devices still use DECtalk-derived methods, its role in AAC was seminal, showing what could be done the emerging technology and underlining the importance of spoken word in assistive communication.

By Diane Kewley-Port and Terrance Nearey • July, 2018

ASA ACOUSTICAL SOCIETY OF AMERICA

JASA-EL will become a separate Open Access journal in 2021

- price will go up to $900 from $500
- extra page
- 2 extra figures

JASA Calendar of covers