Voices in AAC Apps: What Are the Options and the Opportunities?

Rebecca Bright
Speech Pathologist
Therapy Box

Overview

- Native iOS voices

- Commercial text to speech

- Message banking

- Voice banking

- Where next?

■ "The voice that I use is a very old hardware speech synthesizer, made in 1986. I keep it because I have not heard a voice I like better and because, by now, I have identified with it." — Stephen Hawking From a 2006 interview

iOS Voices

■ Native on your iPhone, iPad or iPod Touch

■ Regionalized

■ Possible to try out other regions by changing your settings

Commercial TTS

- Speech technology industry caters to a range of uses, including
  - Intelligent virtual assistants – personal banking, ordering a pizza, Siri (likely to be a $700m industry by 2016)
  - AAC

Commercial TTS

- Big names
  - Nuance
  - Acapela
  - Ivona
  - CereProc
  - NeoSpeech

Commercial TTS

- Benefits
  - Lots of $ means evolving products and better quality
  - Integration with apps is made easy
- Challenges
  - Voices are designed for IVA rather than AAC (usually)
  - Child voices are limited (AssistiveWare Acapela group have voices available)
  - Costly for developers
  - Size of voice files

Opportunities for adjusting voices in AAC apps

- Adjust pitch
- Adjust speech rate
- Custom pronunciation
- Emoticons

Predictable

🔊	⬆	🗑	☰	☺
I	The	You	It	
Hi	That			

Q	W	E	R	T	Y	U	I	O	P
A	S	D	F	G	H	J	K	L	⌫
⬆	Z	X	C	V	B	N	M	↵	

- Nuance voices
- iOS voice
- Voice banking
- Adjust rate
- Adjust pitch
- Custom pronunciation
- Emoticons

Message banking

- Save specific messages
- Record the audio of the speaker
- Save the files
- Import to the apps (e.g. attached to phrases)
- See Boston Children's Hospital's work on this!
- http://www.childrenshospital.org/acp

Message banking in Predictable

- Attach audio recordings to phrases
- Thanks to John Costello at BCH for the nudge

Voice banking

- Now a viable option
- ModelTalker (free)
- Acapela/CereProc (paid options)

ModelTalker

https://www.modeltalker.org/

ModelTalker

- Register with MT to create a secure account.
- Choose the recording method you want to use: MTVR (Windows only) or MT's web-based recording tool.
- If using MTVR, install it, go through the tutorial, and get set up to record.
- If using the web recorder, followr interactive online training.
- Record 10 screening sentences, upload them to server, and wait for an email from MT.
- If everything is fine, MT will provide instructions for moving on to step 4.
- If MT see any problems, MT can suggest ways to fix them and may ask you to repeat step 3.
- Record the full inventory of 1600 sentences and upload them to server.
- Request your voice in a downloadable form for your computer, mobile device, or speech generating device.

ModelTalker

- Feedback
  - Liberating

- Considerations
  - Timing
  - Duration
  - Effort

- Proxy voice banking

Voice in AAC

- Considerations:
  - Regionality
  - Age
  - Longevity
  - Portability
  - Intelligibility
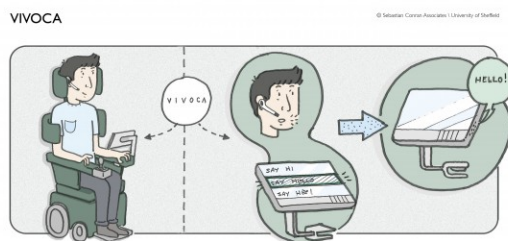 - Perception of others
  - Perception of self

Challenges

- Lack of child voices

- Difficulty with emotion, shouting, whispering etc

- Voice company reliance – changes in market

- You sound like me – multiple people with 1 voice

What challenges do you perceive?

Where to next?

- Speech to speech

VIVOCA

He has a VIVOCA fitted. The VIVOCA learns to recognise what Ben is saying and speaks out a clear message for him.

Where to next?

- Better quality open source voices?

- Voice donations

- Use of voices previously not suitable for banking
  See work by Rupal Patel

- An ever expanding speech industry
  More money = more innovation?

What changes do you envisage?

Thank you

Rebecca Bright

rbright@therapy-box.co.uk

www.therapy-box.co.uk

@TherapyBox