

SpeechCatcher for monolingual and multilingual speech research and clinical practice

SpeechCatcher is a groundbreaking, automated, and language-universal platform designed specifically to support research and clinical applications in all areas of speech acquisition and related disorders (<https://www.speechcatcher.ca>). SpeechCatcher, an offshoot of the Phon software program (<https://www.phon.ca>), empowers researchers, speech clinicians and students with a full suite of integrated tools specifically tailored to support their technical needs.

SpeechCatcher currently exists as an iOS app for iPads. Android and web-compatible versions are being developed. All SpeechCatcher functions are organized within a user-friendly interface:

- Speech data recording: SpeechCatcher presents visual (image or text) stimuli to the client. It automatically records and time-aligns the production in the resulting transcript.
- Transcript validation: Using a specialized phonetic keyboard and predictive shortcuts for common speech errors, the user can quickly and accurately mark the client's speech errors.
- Analysis and reporting: SpeechCatcher's powerful algorithms automatically perform user-selected clinical and phonological analyses on the transcribed data.

Key to many of these functions is how SpeechCatcher is also designed to support speech testing in multilingual and multidialectal settings. This support relies on second-language (L2) data being added to a given speech test. SpeechCatcher then relies on these data to encode L2 phenomena, such as code-switching, which may occur during testing. For example, using a test of English with Greek L2 supplemental data, SpeechCatcher provides functions to easily encode the Greek production of 'τραπέζι' for the English target word 'table', and to automatically incorporate the 'τραπέζι' production as part of the phonological assessment. Whereas such productions can hardly be accommodated by mainstream tests of any language, SpeechCatcher organically incorporates them in ways that enrich evidence-based approaches to speech assessment or, similarly, encode them with the relevant level of detail for academic research.

SpeechCatcher also comes as part of a larger infrastructure. Using dedicated online tools, academic and clinical researchers can create, pilot, use for research, and/or publish new and innovative speech tests, either for single languages or with data for additional languages or regional dialects as described above. The tests and all materials they contain (e.g., images, test data) remain the sole property of the test creators, who can decide to publish their tests as either a free resource to the community or under a commercial license, or simply develop tests for academic research purposes.

In this presentation, we begin with a brief introduction to the Phon program and how Phon and SpeechCatcher offer a well-rounded technological bridge between academic research and clinical applications. After a brief demo of SpeechCatcher's core functions, we focus on its applicability for research and clinical work in multilingual settings. We open the floor to the audience to discuss how its current functions could be augmented or supplemented to offer maximal support to academic research, clinical speech practice, as well as in all areas of student and professional training.

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