### Using Phon for IPA Transcription, Phonological Analyses, and Treatment Target Selection

### Step 1: Record a Speech Sample

- 1. For a more complete analysis of a child's sound system, we recommend using singleword probes that sample each phoneme and consonant cluster multiple times, in multiple contexts.
- 2. Phon can also extract phonological information from transcriptions of a connected speech sample.

Step 2: Open your Transcript for Phonological Analysis within Phon

- 3. **This is a <u>very</u> abbreviated guide to transcription and analysis with Phon.** The full Phon manual is available within the program by selecting Help > Phon Manual from any window.
- 4. Download Phon (a free, open-source program), available here: <u>https://www.phon.ca/phontrac</u>
- 5. In the [Project Manager] window, create a Corpus (e.g. all the transcriptions for a given child) and a Session (the particular probe or sample you will transcribe and analyze).
- 6. Under [Session Information], identify if there are multiple speakers and link the session to the recorded speech sample.

**Step 3: Segment and Orthographically Transcribe the Sample** 

- Select View > Segmentation to divide the sample into individual Records. For a language sample, segment at the end of each utterance. For a single-word probe, set the default length of each Record to 1,000–2,000 milliseconds (approximately the length of a word with some room to spare) and segment at the end of each child production of a probe word.
- 8. Enter the orthographic transcription of the child's productions.

**Step 4: Automatically Transcribe Target IPA** 

- First, change to the [Transcription] layout by selecting View > Load layout > Transcription. In the [IPA Lookup] window, the IPA for all Records in the session can be automatically transcribed at once, or you can generate transcriptions for each Record individually.
- 10. To automatically generate IPA target productions for the entire session, in the [IPA Lookup] pane, select [Auto-transcribe Session] in the top right corner. In the window that appears, check [Overwrite] and [IPA Target] (this will fill in the [IPA Target] Tier and overwrite anything written in them already).
  - a) [All records] should be selected. Click [Ok].
  - b) You may also choose to fill in the [IPA Actual] Tier (this is where you will transcribe the child's actual production). If the child's production is similar to the target adult

form, the IPA will be similar and you can simply modify the IPA to reflect the child's production, rather than typing the utterance yourself.

c) If using a probe, you can save the Session after generating automatic IPA transcriptions for quick reuse whenever you use the same probe.

### **Step 4: Transcribe Actual IPA Child Production**

- 11. Select [Speech Analysis] next to the [IPA Lookup] tab to change that window to the waveform/spectrogram view. To listen to the utterance, select the "Play" icon in the [Segment] Tier or the [Speech Analysis] window.
- 12. Transcribe the child's utterances or words.
- 13. **Ctrl+M will open an IPA Map** for entering IPA symbols.
- 14. The [Speech Analysis] tab can be very helpful while transcribing. You may wish to isolate a sound or word, which can be done by clicking and dragging to select it in the waveform. Then click "Play" in the [Speech Analysis] pane to play only the selected portion. You can also hit "space" to play/pause.

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**Step 5: Run Analyses** 

- 15. Phon has a number of built-in queries, including generation of substitutions, deletions, and PCC.
  - a) To run these, go to Query or Tools and select...
    - (a) Deletions, Phone Inventory/Accuracy or PCC-PVC
- 16. Run a custom query under Query > Data Tiers
- 17. Run a custom script, such as AutoPATT, under Plugins > PhonShell scripts.
  - a) AutoPATT automates the evidence-based paradigm of the Phonological Analysis and Treatment Target Selection protocol (PATT; Barlow, Taps, & Storkel, 2010).
    - a) The plugin follows the evidence-based paradigm of the Phonological Analysis and Treatment Target Selection protocol, provides suggestions for efficacious treatment targets by first conducting an in-depth and comprehensive phonological analysis (providing phonetic, phonemic, and cluster inventories), and then using the child's existing sound system to suggest singleton and cluster treatment targets using criteria based on attested principles of speech-sound target selection.

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*The AutoPATT script must be saved in Phon's user directory, usually* **User > Documents > Phon.** A folder, titled **PhonShell**, must be created in the **User > Documents > Phon** directory.



The AutoPATT script must be saved within the PhonShell folder.

# Components of AutoPATT Output

# **Treament Targets and Sounds to Monitor:**

Phonological Assessment and Treatment Target Selection (PATT)				
***************************************				
Done.				
In PATTStepOne()				
Looking at p and l				
Looking at p and 1				
Looking at t and 1				
Looking at k and w				
Looking at k and 1				
Targets after Step One: [spl	spi	sti	skw	skı]
*****				
Phones to monitor: [f	θ	ð	S	3
Phonemes to monitor: [g	f	θ	ð	z
Clusters to monitor: [kw	рj	kj	bj	gı

### **Minimal Pairs:**

ˈbeiː	'seiː	'Jel ː	'peiː	'leı:	'teiː
'biː	'kiː	'diː	'tiː	'ui:	't <sup>h</sup> iː
ˈbæb	'bæp				
ˈbæp	ˈbæb				
ˈbæː	'mæː	'tæ:			
ˈbɛː	ˈjɛː	ˈlɛː	ˈdɛː	't <sup>h</sup> εː	
'LID'	'LID'	't <sup>h</sup> u			
ˈbɪː	'pı:	'mı:			
'bai n	ˈbaɪ <sup>·</sup> t				
ˈbaɪ <sup>¹</sup> t	ˈnaɪ <sup>·</sup> t	'bai n			
'LCd'	'pɔɹ	'hɔɹ			
boi:	'nɔıː				

## **Phonetic and Phonemic Inventories:**

	bilabial		labiodental		interdental	alveolar		palatoalvec	olar
plosive	p,p	b				`t,t,t <sup>h</sup>	d		
nasal		m					n		
fricative				v		s			
other fricative									
affricate								ť	
approximant									r
lateral							I		
glide		w							

## **Consonant Cluster Inventory:**

tj bı	bl	۲p	dl	kl	tı	ku	
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