

Affective Archives



Trauma, Oral History & Bio-signals



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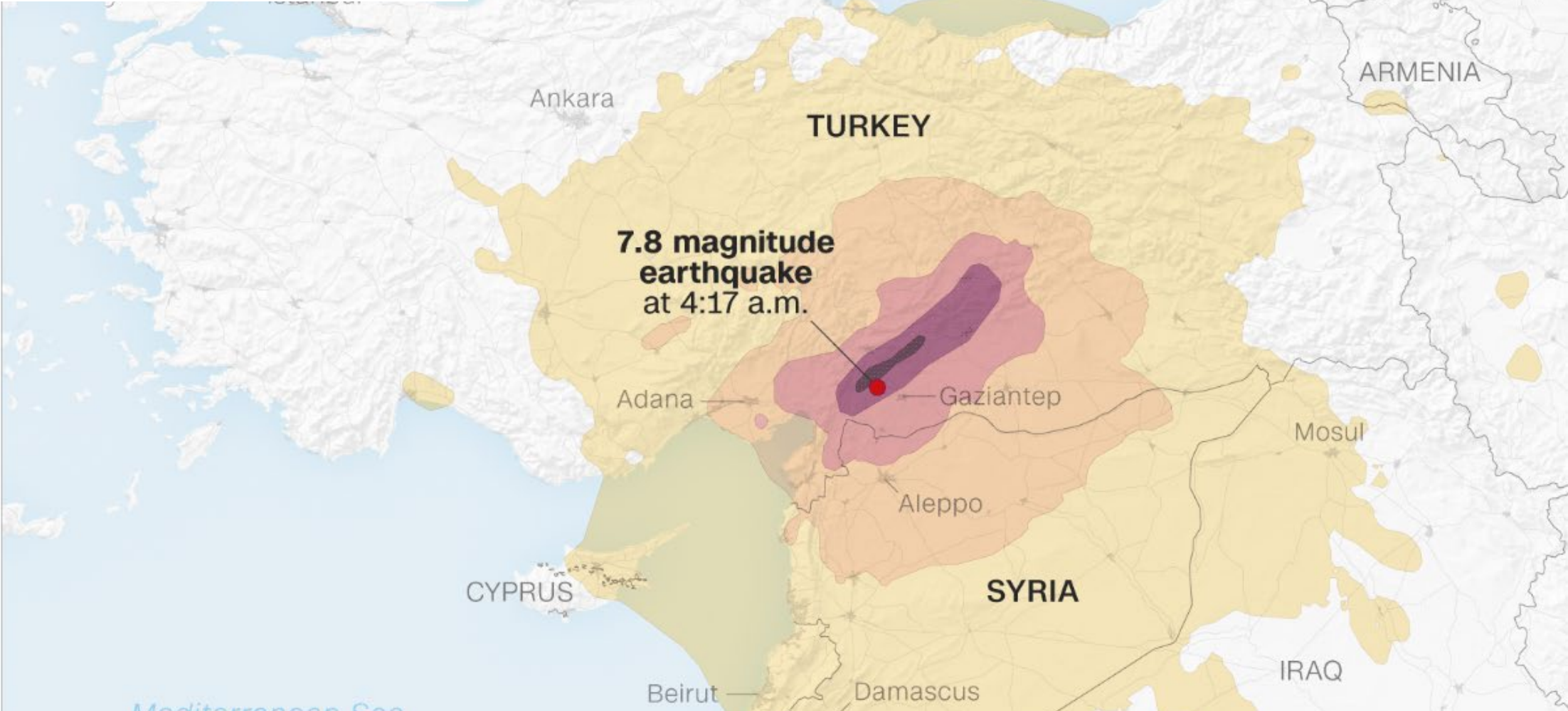
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An estimated 14 million people, or 16 percent of Turkey's population, were affected.



An estimated 5.37 million people across Syria may have been made homeless, while 10.9 million people, nearly half of Syria's population, were affected



Why are we creating an Oral History Archive?

Oral History Collections aim to capture the subjective impact of the events.

These collections consist of interviews about impactful events such as a natural disaster, or a political upheaval, or sometimes a cultural trend.



Affective Archives

Migration & Belonging

“Belonging” is a concept describing the (spatial, social, cultural) attachment one carries inadvertently.

In the face of mass-traumatic events, migrants tend to become attuned to the happenings and news from their country of origin

We want to:

- Record the duality of a migrant’s life in the event of such mass trauma
- Save these memories
- Find ways to share such traumatic experiences



Looking at *BREATHING* in Oral History Archives

- ***Records of Breath* by Evrim Kavcar**
 - How can we give voice to a mass trauma that has occurred because of state violence?
 - The only thing we are left is our BREATHS...
- ***Hidden in a breath: Tracing the breathing patterns of survivors of traumatic events***
 - Measure the effect of culture and language while communicating trauma

Why Affective Archives?

We collect somatic information such as breathing & heart rate

We aim to analyze emotional instances of recordings

We aim to build interfaces that recognize and communicate the affective nature of these collections

Emotion	Emotional dimension		Respiration feature		
	Valence	Arousal	Respiration rate	Respiration depth	Respiration regularity
Anger	Low	High	Increase	Increase	Potentially irregular
Fear	Low	High	Increase	Increase	Potentially irregular
Anxiety	Low	Medium to high	Increase	Decrease	<i>Unclear</i>
Crying sadness	Low	Medium to high	Increase	Variable	Irregular
Non-crying sadness	Low	Low to medium	Increase	Variable	<i>Unclear</i>
Calmness	Medium to high	Low	Decrease	Decrease	<i>Unclear</i>
Happiness	High	Medium to high	Increase	Variable	Irregular (when laughing)

Challenges & Opportunities

- **Access & Interfaces**
 - **Who are the end-users of OH archives?**
 - **Who will look for access in the future?**
- **Tools or a change in the archival paradigm?**
 - **For digital humanities scholars, oral historians, cultural anthropologists, media archivists, within/for trauma: social workers, psychiatrists**

Challenges & Opportunities

Affective Computing:

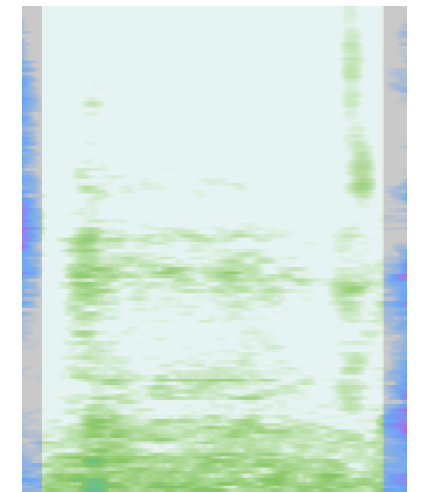
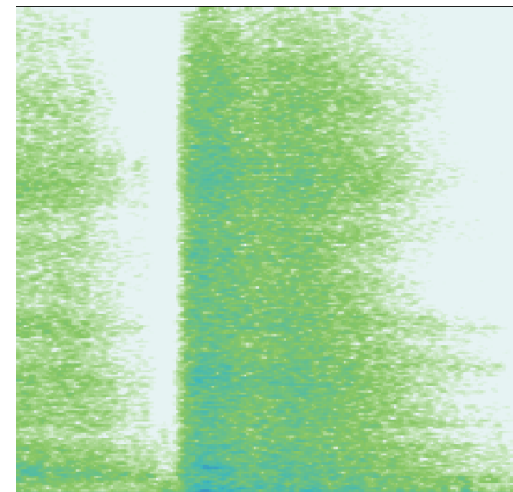
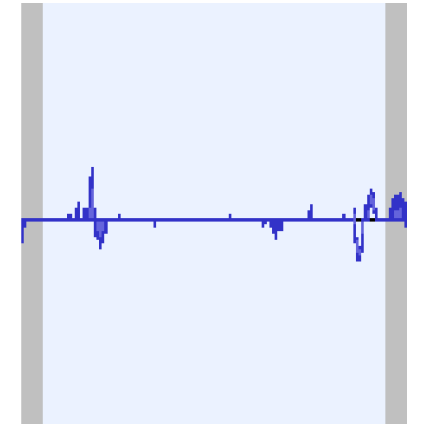
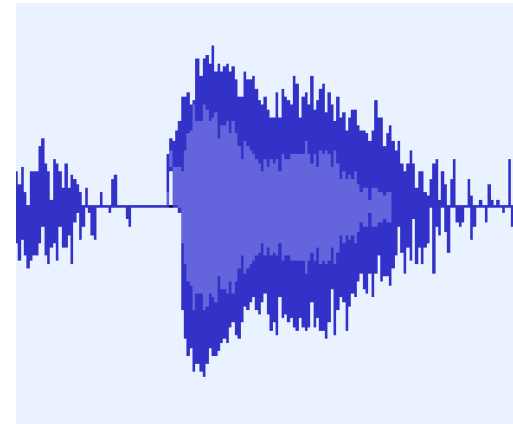
- **Emotion Data in the format of text, audio, video and bio-signals**
- **Generating affective interfaces for archival collections**
 - **Use of GenAI for preserving the privacy, rendering archives more accessible**

Speech Analysis:

- **Emotional speech analysis**
- **Emotional speech synthesis – with breathing information**
- **Enriching under sourced languages such as Turkish, [Kurdish, Arabic]**

Ethical Guidelines

- How to protect the privacy of subjects of your research?
 - Informed Consent
 - Data protection plan
- What does informed consent cover?
 - Listening to a recording
 - Machine-listening to a recording for transcription purposes?
 - Mining your recording for emotion detection?
 - Extracting bio-signals from your recording?
 - Using your recordings as training-data?



Breathing Emotional State

Normal Breathing

Now & Next Steps

Ethical review is carried out

A pipeline to automatically transcribe and translate the interviews is prepared

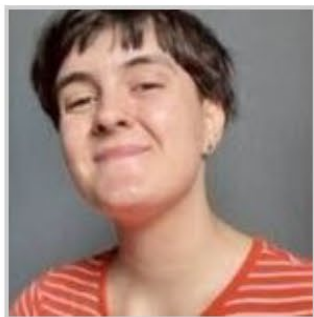
We carry out interviews **only** in Turkish

We have applied for an AINED-XS fund:

- To continue collection & analysis

- To do emotional speech synthesis with breathing information

We plan to apply for an Open Technologie funding scheme



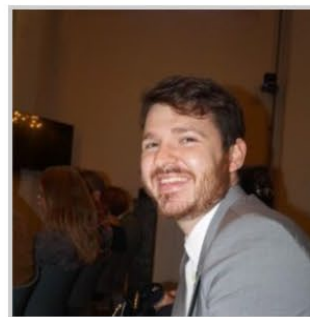
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Affective Archives



Thanks to



- Yasemin Bagci
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Publications

A.A. Akdag Salah, M. O., E. Kavcar, H. Kaya, A. A. Salah. (2019). *Hidden in a breath: Tracing the breathing patterns of survivors of traumatic events*. Digital Humanities 2019, Utrecht.

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