



## Open Dynamic Interaction Network

ODIN is a cellphone-based data collection system for contextually responsive ecological momentary assessments.

### SIGNIFICANCE

Continual development of ecological momentary assessment and other “big data” tools have greatly expanded the scope of observational behavior that is available to researchers. What is often missing is an understanding of why a behavior occurs in the first place. The Open Dynamic Interaction Network (ODIN) toolset provides a way to tie behavioral observation (in the form of GPS, Bluetooth proximity, and physiological signals) with adaptive questions to understand the unseen context of an action, all through a participant’s Android smartphone. Questions through ODIN are prompted by specific behavior patterns to ask about the motivation and social context that motivate an observed behavior. Further questions can then be adaptively programmed to respond to different response patterns. All of this can occur in or near the time when an event is first observed, reducing recall error and reducing the burden on the participant, as they can answer a few quick questions instead of a battery weeks or months after the event has occurred. This system ties the advantages of large scale observational data collection made possible through continuing technological advances, with the ability to query the motivation behind the observed behavior.

### HOW CAN I LEARN MORE ABOUT ODIN?

Stop by our booth or send an email to [kdombrowski2@unl.edu](mailto:kdombrowski2@unl.edu), or visit us at <http://odin-software.com>

### ODIN COLLECTS

- Data from the sensors on participant cellphones
- Participant answers to questions that are dynamically triggered by “rules” based on sensor data

### CUSTOMIZE ODIN

Using a web-interface, researchers can customize by specifying:

- which sensors (see below)
- the study protocol questions
- the “rules” governing the contextual circumstances in which each question should be shown

### SUPPORTED SENSORS

- Latitude and longitude (via GPS)
- Physical interaction with other participants (measured via Bluetooth signal strength)
- Activities such as walking, running, biking, driving, or stationary (via accelerometer and Google Activity API)
- Stress (measured via electro-dermal activity reported by the Empatica E4)

*Support for other sensors is under development see website for updates.*

### “RULE” PROMPTS

In addition to simple time-of-day and day-of-week based rules, ODIN supports a wide range of different types of rules. Some simple examples include:

- Arrival in a geofenced area
- End of a physical interaction
- If a person’s stress level increases

