

Smartphone Users Want to be Mocked

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Privacy vs Mocking

Privacy: the quality or state of being apart from observation.
Can users' data have privacy on Android? With the current permissions model, it's *unlikely*. With Google behind Android, it's *probably impossible*.

Mock: to deceive or delude; to imitate or counterfeit.
Apps and advertisers are eager to collect as much data as they can about users. When did users agree to provide truthful data?

Example Use Cases

You



Mock your routine.

Your Phone



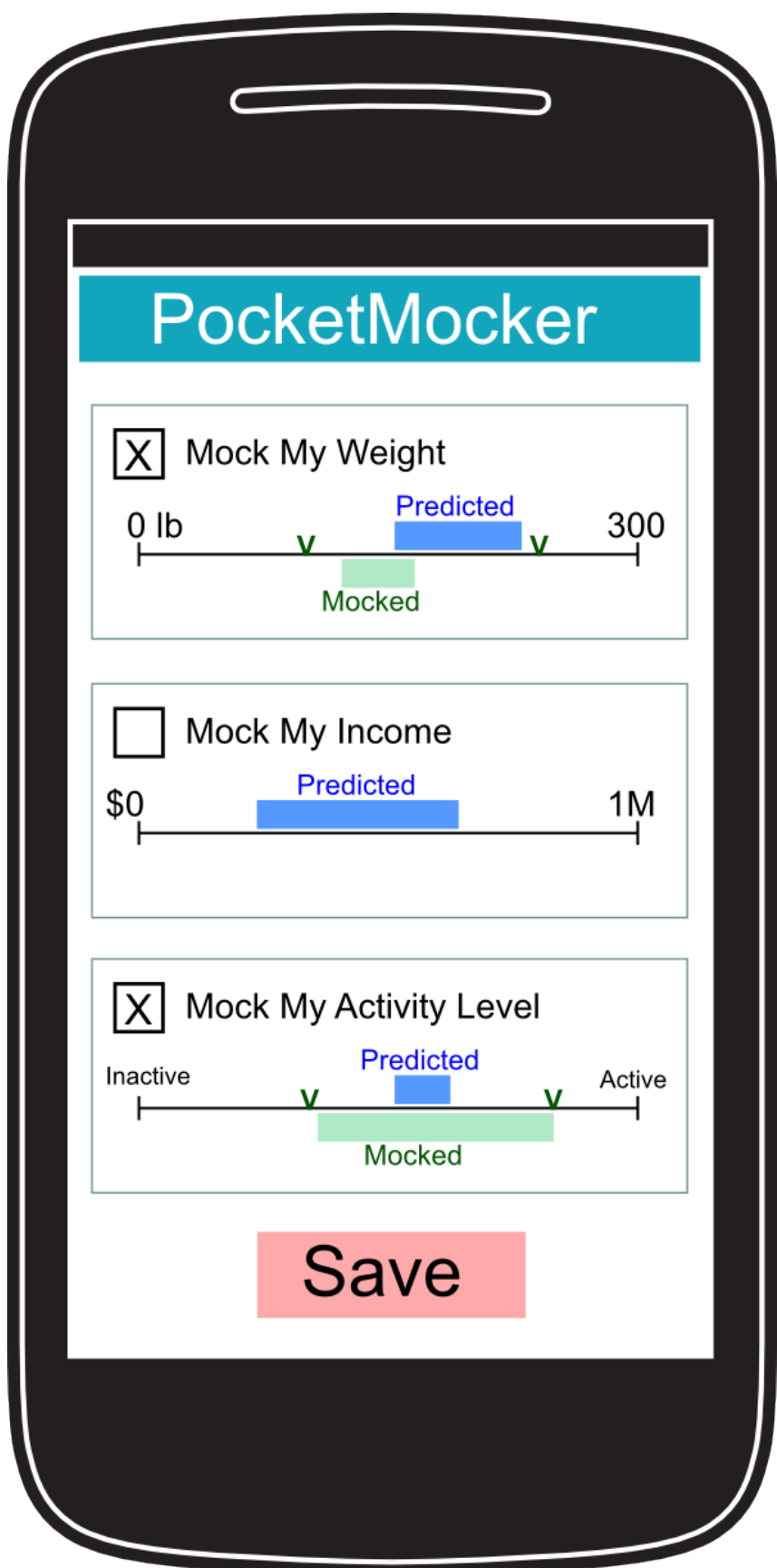
Mock your habits.



Mock your health.



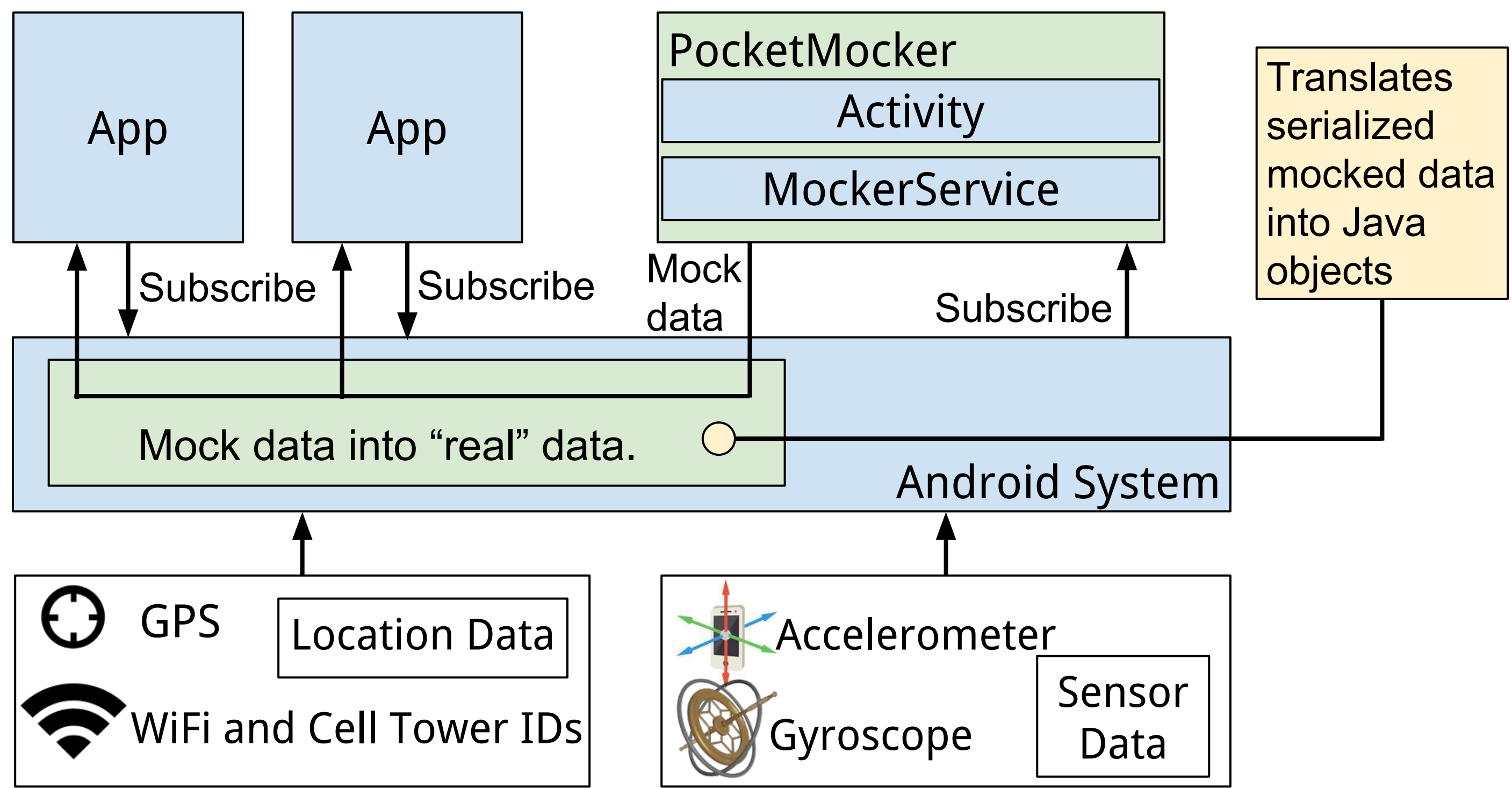
Objective-Based Mocking



Objective-based mocking: manipulating data to benefit users and their objectives, such as mocking their eating habits to appear more healthy.

PocketMocker: an Android app and Android system changes to enable objective-based mocking, and provide information on how private data is being used.

Architecture



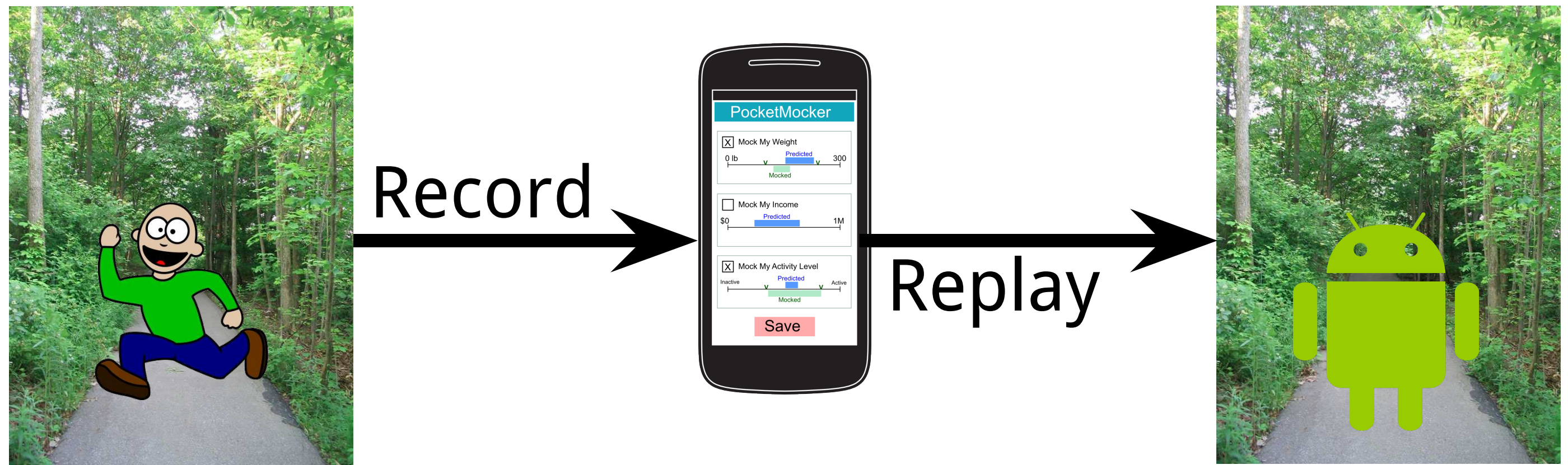
To control access to private data, Android needs to be modified at the platform level or the kernel level.

Platform changes: faster to implement, but gives up Mocking Context security.

Kernel changes: slower to implement, but better security of the Mocking Context.

PocketMocker Prototype

The initial prototype of PocketMocker focuses on mocking location, sensor, and network data. This prototype allows users to initiate a recording session for a particular objective through the PocketMocker Activity, which logs all relevant data to PocketMocker's database. The user can then initiate a replaying session, which passes the logged data from PocketMocker's Mockerservice to the registered platform components (e.g. LocationManager, SystemSensorManager, etc). The changes on the platform side translate the serialized data into Java objects that are passed to third-party apps' listeners.



Future Work and Challenges

- **Evaluate PocketMocker.** PhoneLab-powered user studies, and case studies of top apps on Google's Play Store.
- **More secure PocketMocker.** Stop assuming that apps are unaware of mocking.
- **Automate mocking.** Automatically start mocking to better aide the user in moving towards their objective.
- **Experiment with mocking.** Mocking for profit.
- **Ensure spacetime continuity.** Abide by the laws of physics when automatically mocking.