Evolutionary Approaches to Privacy and Information Security

Alessandro Acquisti, Laura Brandimarte,(CMU) and Jeff Hancock (Cornell)

Background and Goals

- Primary focus of investigation: the study of the impact that sensorial stimuli have on the behavior of individuals in cyberspace, especially as potential victims of cyberattacks
- Our responses to threats in the physical world are sensitive to stimuli which we have evolved to recognize as signals of danger
- Those signals may be absent, subdued, or even manipulated, in cyberspace
- In this project, we investigate the *evolutionary* conjecture that security and privacy decision making in cyberspace may be particularly complicated because, among other reasons, online we lack, or are less exposed to, the stimuli we have evolved to employ offline as means of detection of potential threats

Approach

- Through a series of experiments, we indirectly test our conjecture by measuring the impact that the presence, absence, or changes to an array of stimuli in the *physical* world (mostly unconsciously processed) will have on security and privacy behavior in *cyberspace*
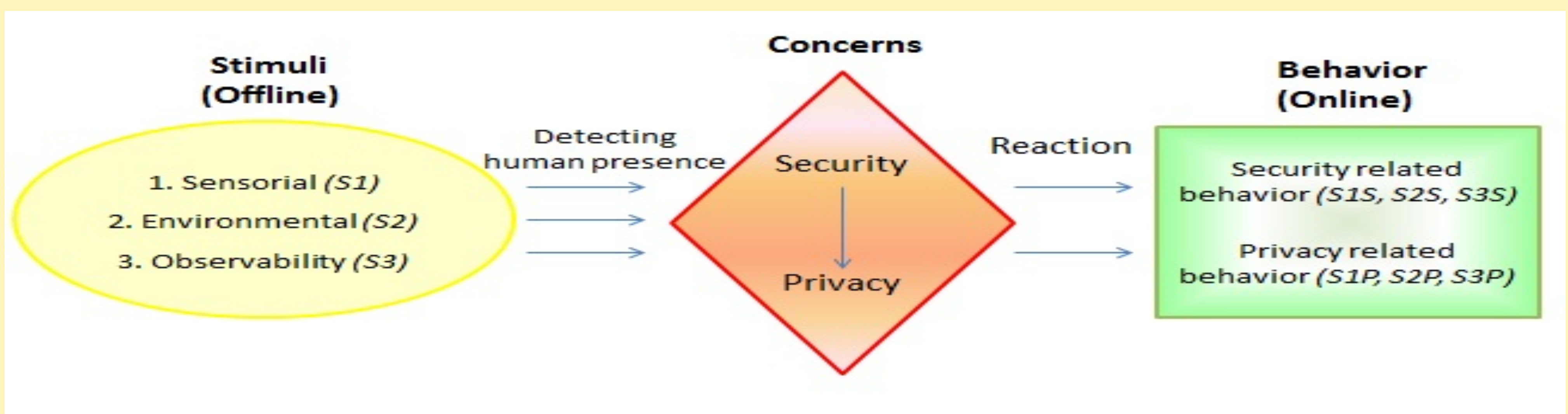
Experiments

- Participants are recruited to take part in a study on personality and emotions, which consists of a survey containing privacy sensitive questions
- Participants are **randomly assigned** to a condition where they are exposed either to a **human-related sensorial stimulus**, or to a **non-human-related stimulus**
- Stimuli are visual, auditory, olfactory, or a combination of the three
- By comparing participants' responses in these **matched pairs** of conditions, we can test whether the detection of human beings around oneself (as opposed to objects) is **perceived as a potential threat to privacy** or security, and therefore affects willingness to disclose (measured by depth and breadth of disclosure in the survey responses)

Interested in meeting the PIs? Attach post-it note below!

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