

SENSES OF PRIVACY: DETECTION OF ONLINE THREATS



Presenting on behalf of the
American Psychological Association



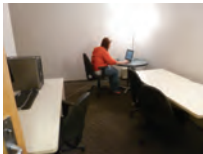
JEFF HANCOCK
Stanford University

ALESSANDRO ACQUISTI
Carnegie Mellon University

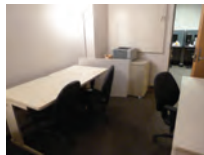
LAURA BRANDIMARTE
University of Arizona

THE LAB EXPERIMENTS

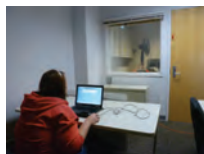
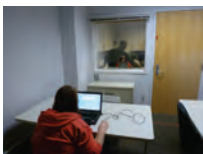
PHYSICAL PROXIMITY



AUDITORY CUES



VISUAL CUES



OLFACTORY CUES



PEOPLE MANAGE PRIVACY ONLINE DIFFERENTLY THAN IN THE PHYSICAL WORLD

As **skilled social animals**, human beings seem adept at managing privacy in the physical world: We rely on cues and adapt our degree of openness or disclosure toward others according to the situation. Our privacy reactions are swift, instinctual, and sensible—we lower our voices during a sensitive conversation with a friend when we hear a stranger approaching; we remove a personal document from a table when we see the waiter standing close by; we close the shutters of our bedroom windows at night when we notice neighbors walking by.

Online, navigating privacy settings, choices, and outcomes seems particularly daunting, and blunders abound: We do not hear the NSA monitoring as we hold a conversation with a friend over Skype; we do not see Google standing by tracking our documents and sensitive searches; we do not smell Facebook following us across all the locations where we carry our smartphones. And yet, human beings may be wired to rely precisely on those sensorial cues to assess the privacy implications of their behaviors—both online and offline.

WE STUDY WHETHER PHYSICAL CUES SUGGESTING THE PRESENCE OR ABSENCE OF ANOTHER PERSON IN THE PROXIMITY OF AN INDIVIDUAL CAN AFFECT THAT PERSON'S PRIVACY-RELEVANT BEHAVIOR.

In **cyberspace**, sensorial cues may be absent, subdued, or even intentionally manipulated by malicious third parties. Thus, privacy (and security) response mechanisms that are common offline may not be activated when it comes to informational privacy—especially when it comes to online privacy.

In **four lab experiments**, we investigate the effect of sensorial cues, suggesting the presence of human beings, on privacy-relevant behavior. All experiments are based on the addition of physical stimuli to an environment in which the subject is carrying out potentially sensitive cyberspace activities.

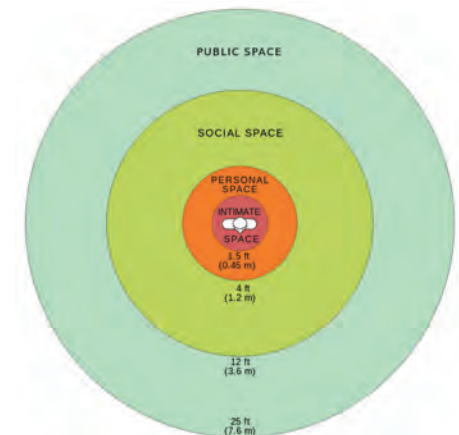
If you can see, hear or even smell the presence of a human, you are less likely to disclose sensitive information on the Internet.

DIGITAL PRIVACY IMPLICATIONS

Humans seem **ill-equipped** to react to information privacy risks that happen online, where we lack the external cues we have evolved to rely on for risk management.

People's online privacy concerns may not be strong enough in digital environments to be activated and lead to changes in behavior, unless we can build into online interactions those same stimuli that humans have evolved into using to detect potential threats in the physical world.

HOW WE PERCEIVE PRIVACY AND SPACE



CREDITS

This research is sponsored by Stanford University and funded by the National Science Foundation's Directorate for Computer & Information Science & Engineering.

