Developing a Social Psychological Laboratory on a Shoestring

Jane Sell
Stuart Hysom
Louis Lang
Tony P. Love
Bianca Manago
Huong Le
Tiffany Spivey
Texas A&M University –College Station

ABSTRACT

We describe the potential for handheld devices to change the way experimental social psychology can be conducted. We argue that the new technology provides affordability and portability and creates new design possibilities.

DEVELOPING A SOCIAL PSYCHOLOGICAL LABORATORY ON A SHOESTRING

One of the most vexing issues faced by experimental social psychologists is the creation and subsequent maintenance of a laboratory. There are a handful of laboratories in sociology departments (see the American Sociological Association social psychology section: http://www.ssc.wisc.edu/socpsych/ASA/Links.html). These laboratories usually are configured with several different kinds of rooms that enable both individual and group studies. Most importantly these contain computer and camera equipment, and recording devices. A well-established laboratory often has a person or persons whose time is dedicated to maintaining the computer equipment and/or developing necessary software. Some laboratories have been maintained for many years, but there are also many stories of former laboratories being transformed for other uses because they are not in constant and continuous laboratory use. Additionally, once a particular computer configuration and software program is developed, it can become rather quickly obsolete. As new technologies are developed, or new commercial software replaces its predecessors, continuing expenditures for upkeep are necessary. Consequently, well-equipped experimental sociology laboratories are most likely to be found in institutions with larger resources and an established history of experimental research.

Smaller institutions or those that lack resources cannot afford to furnish laboratories, especially if relatively few researchers will be using them. If a single researcher is an experimentalist, it can be difficult to convince administrators that laboratory space and equipment is necessary. It is often the case that experimentalists are asked to find other experimentalists in other departments, usually psychology, with which to share space and time. Sometimes interdisciplinary arrangements can be achieved, but often the "out of department" researcher is low on the priority list.

All these things contribute to a problematic situation for a sole experimentalist or experimentalists in institutions in which resources are difficult to obtain. Experimental research relies on the ability to control and change various aspects of the physical environment as well as human interaction. If there is no physical way to ensure control, experimental research simply cannot be conducted.

But, there may be an exciting solution. We have been experimenting on new forms of technology, iPod Touches in particular, that have three extraordinary characteristics: they are relatively inexpensive; they are mobile, and software and software updates are readily available. These characteristics can truly revolutionize the way in which experimental researchers can conduct their studies. Because these devices are inexpensive, they take the place of more expensive computers—literally ten of these devices are the price on one computer station. Because they are mobile and handheld, they enable the construction of different research configurations. What this allows is an incredible versatility. Researchers can do studies in which people never interact face to face by putting people in different rooms. Even where no laboratory space is available, offices or classrooms almost always are. Researchers could do studies in which people do see each other, but receive only certain information over the hand held devices. Studies such as these could be done in a classroom. Classrooms can also be configured with relatively inexpensive, portable partitions if larger studies are appropriate. Field experiments also become easier to conduct because the devices are so easy to move around and organize. Because the devices are mobile, they enhance the researcher's flexibility.

Figure 1.

The quality of both the sound and the picture is extremely high; most of the hand-held devices were originally developed for media presentation (such as youtube). The quality of the video enables the construction of clear information delivery in the form of instructions or manipulations. Additionally, questionnaires, vignettes and other forms of experimental material are easy to deliver and have the added advantage (over paper and pencil material) of being able to enlarge or reduce while the subject is interacting.

Figure 2.

So, for example, if a researcher were interested in jury processes, he or she could demonstrate a witness's testimony over the devices and then choose either to have the mock jurors interact face-to-face or in other more controlled manners. Votes could be recorded and then reported; or votes could occur without the recording.

Figure 3.
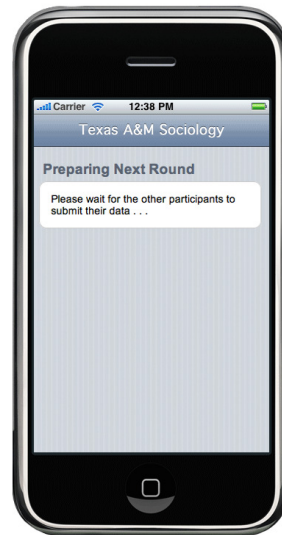
These handheld devices also have inexpensive software (termed apps) that could dramatically innovate experimental designs. There are applications for interactive games, for example that could be used for group tasks. There are apps for messaging that we have used to control with whom and how a particular subject can communicate. Some applications don't allow innovation as much as they eliminate costs. As an example, we now use the devices for recording our interviews with participants. Microphone attachments are inexpensive and the quality of the recording is extremely high. Furthermore, any single interview can be easily and quickly stored on a central server.

Finally, software development is easy to share. As an example, we have developed a highly flexible software program for analyzing public goods or resource goods (or common pool goods). The program can be used to run groups of differing numbers who might possess differing resources. It runs off any server and can be used to conduct one study or several studies at the same time. The program we have developed utilizes open source and freely available software such as Apache, PHP, and MySQL. This reduces the cost of operating our system dramatically, while ensuring the longevity of our system from community driven, periodic updates.

The use of these handheld devices is not without negatives. Sometimes training is necessary so that participants learn to navigate the touch screen. The devices rely on the presence of wireless Internet access, as well. This could be a problem if wireless access is not reliable. If the wireless network fails, the devices are not configured to receive a wired Internet connection.

But, even with these negatives, we are encouraged through our own use of these hand held devices. We think their potential is enormous. They provide convenience, adaptability and affordability. They are a way to democratize experimental research because the presence of a highly developed laboratory with dedicated use is no longer a necessity. International scholars who never had laboratory resources can do experiments; scholars in small or poorly funded institutions can do experiments. Field experiments can be easier to implement because the lab is more easily portable. Large laboratories will also, of course, benefit from this new technology; but they will not have a monopoly on experimental research.

AUTHORS' NOTE

AUTHOR BIOGRAPHIES

Jane Sell is a professor at Texas A&M University. Her substantive interests include social dilemmas, status processes and cooperation. j-sell@tamu.edu

Stuart Hysom is an assistant professor at Texas A&M University. His interests include experimental methodology, status construction and justice. shysom@tamu.edu

Louis Lang is an undergraduate computer science major at Texas A&M University. His interests include computer and network security, malware analysis and machine learning. louis11@tamu.edu

Tony P. Love is a sociology doctoral student at Texas A&M University. His interests include role-taking and deviant behavior. tonyplove@tamu.edu

Bianca Manago is an undergraduate sociology student at Texas A&M University. Her interests include social dilemmas, status processes, and social policy. biancam@tamu.edu

Huong Le is a sociology doctoral student at Texas A&M University. Her interests include identity and sociology of education. Huong.le@tamu.edu

Tiffany Spivey is human resource management master's student at Texas A&M University. Her interests include the oil and gas industry and corporate business structures. spivey@tamu.edu