

Citizen Science to advance research on emotion regulation

This app brings science to your fingertips – across the globe

by [Susanne Schweizer](#)

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Throughout modernity, science has been synonymous with truth. But replication crises across disciplines and 'fake news' have deeply eroded society's trust in science. The Citizen Science movement is a way to rebuild trust through citizen involvement. The idea is that anyone can contribute to reliable scientific knowledge, and science and science policy are responsive to society's concerns and needs when they are open and accessible to all.

In our recent Wellcome funded project, the [Emotional Brain Study](#), Professor Sarah-Jayne Blakemore and I are collaborating with citizen scientists the world over. The study is conducted using the *Emotional Brain Study app*, which is free to anyone on [Google Play](#) and [Apple store](#). The app is designed to study the development of emotion regulation across the lifespan.

But how can we study the human brain with an app?

Mobile brain scans are still a futuristic vision. However, psychologists have been using game-like tasks for more than a century to study behaviour. The games on our app do exactly that: They measure the cognitive functions that underlie successful emotion regulation. Specifically, our app-based tasks test memory, attention and other complex cognitive functions in the context of emotional and neutral information.

"As we open our research to anyone anywhere with a smartphone or tablet, we can draw upon much larger sample sizes than would be possible in a standard lab setting."

The data this Citizen Science project produces will allow us to investigate how the ability to regulate emotions might fluctuate within individuals and change across the lifespan. We hope to improve our understanding of the basic cognitive functions underlying successful emotion regulation and, by extension, good mental health.

How can Citizen Science improve science?

Research in psychology and the cognitive neurosciences encounters problems (including replicability) when studies do not include a sufficient number of research participants to draw statistically meaningful and reliable conclusions from the data. We hope to avoid that problem: As we open our research to anyone anywhere with a smartphone or tablet, we can draw upon much

larger sample sizes than would be possible in a standard lab setting.

Our approach also makes it much easier for people to volunteer for research. Rather than taking time off from work, school, or leisure activities to come to a psychology lab, they can participate on their daily commute or standing in line at a supermarket.

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Citizen Science also can help overcome the lack of diversity that is common in research studies. Most insights in cognitive and brain development come mainly from Caucasian, middle- to high-income, Western research participants, and may not be transferrable to other demographic groups. App-based anonymous data collection is one way to reach more diverse samples. Since its launch in August 2019, the Emotional Brain Study app has been downloaded from citizens across the globe.

Can the classroom become a testing lab?

Citizen Science projects make world-class research accessible and tangible across geographic and economic boundaries and in many educational settings. High school science students from Johannesburg in South Africa to Oklahoma in the US can download the app, which we developed in the UK. The app links to a companion [website](#) where students can learn more about the project, interact directly with scientists, and contact the research team.

How can this research benefit society?

While mobile brain scans may still be far off, regular digital mental health and cognition check-ups hold promise. Studies like ours can provide benchmark data. Then, as participants play these games regularly, researchers can note any changes in cognitive functioning and track circumstances that improve or reduce emotion regulation capacity and mood. Eventually, this information can be fed back to participants with personalised recommendations that may range from getting more sleep to contacting a health care professional.

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However, for these games to realise their prognostic potential, we need to ensure they are reliable markers of emotion regulation. Data from our Emotional Brain Study app will help us do that. As more people use our app regularly, we can improve our models for how emotion regulation changes across the lifespan. Citizen scientists have it in their hands to fundamentally advance cognitive and brain sciences in decades to come. Why not download the [Emotional Brain Study app](#) today and become a citizen scientist?

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