Call for short research proposals to correlate survey questions with game-based psychological profiles

*The ScienceAtHome (SAH) project has reached an agreement with DR to jointly conduct a massive citizen science project in connection with DR's focus on 2018 as the year of science. The SAH-team has developed a citizen science game, Skill Lab:Science Detective, enabling the (partial) mapping of a spectrum of cognitive and psychomotor indicators**, for the development of player cognitive mapping (of course, with their consent). In addition, we are gathering socio demographic data such as age, gender, employment, education level, country of residence, and nationality. The sociodemographic data, however, is not mandatory and we are gathering it only for players who want to fill in their profiles in our website.*

The project starts with a public calibration phase, currently running. This will provide the data to calibrate the underlying model linking individual combinations of features in the new games with classic psychological evaluation models and the cognitive traits of the player through a set of classic psychological tasks.

See
https://www.dr.dk/nyheder/viden/nysgerrig/tema/danmarks-nye-superhjerne
for publicly available information about the project including access to the calibration version of the game.

With the model in place, the psychological tasks (which are time consuming) will be taken out from the game. SAH and DR have then planned a major national event in Week 36, 2018, (1-9/9) in which we will engage as many Danes as possible to participate in a national cognitive ability mapping project. The event will be promoted over a broad range of DR platforms.

The core motivation behind the project is the fact that with the advent of AI it is becoming increasingly important for us to understand ourselves better so we can create future tools and interfaces that will optimally harness the unique strengths of humans as well as machines. In addition, in a future where knowledge is power, we feel that it is important for a democratic society to ensure equal access to information, including information from the social sciences. We see any unbalance in knowledge as a fundamental roadblock for creating a future society with equal opportunities for everyone.

In addition to the game-based mapping of cognitive abilities, the week-36 participants will within the game be given the option to answer a range of questions (~20) posed by researchers in various fields who would be interested in pairing their research questions with individual cognitive abilities.

The program committee hereby invites short research proposals from researchers with specific research questions which could be related to the cognitive abilities listed below. The short proposal should be less than one page and describe the 2-5 closed-ended survey questions to

be posed to the players, the research hypothesis and the methodology of data analysis along with the description of the team of researchers contributing to the proposal.

In terms of publication of results, the SAH-team aims to collect the results from the cognitive ability mapping effort and main findings of the question-based research into a single high-profile paper with all involved researchers as co-authors. After this, follow up papers with individual teams of researchers can then be pursued.

The short proposal and the CV of the main PI should be sent by email to Jacob Sherson (sherson@phys.au.dk) no later than 6th of August. Notification of the decision of the program committee will be given on the 10th of August.

Program committee
Jacob Sherson
Carlos Díaz
Carsten Bergenholtz
Ali Amidi
Michael Bang Petersen
Rajiv Basaiawmoit

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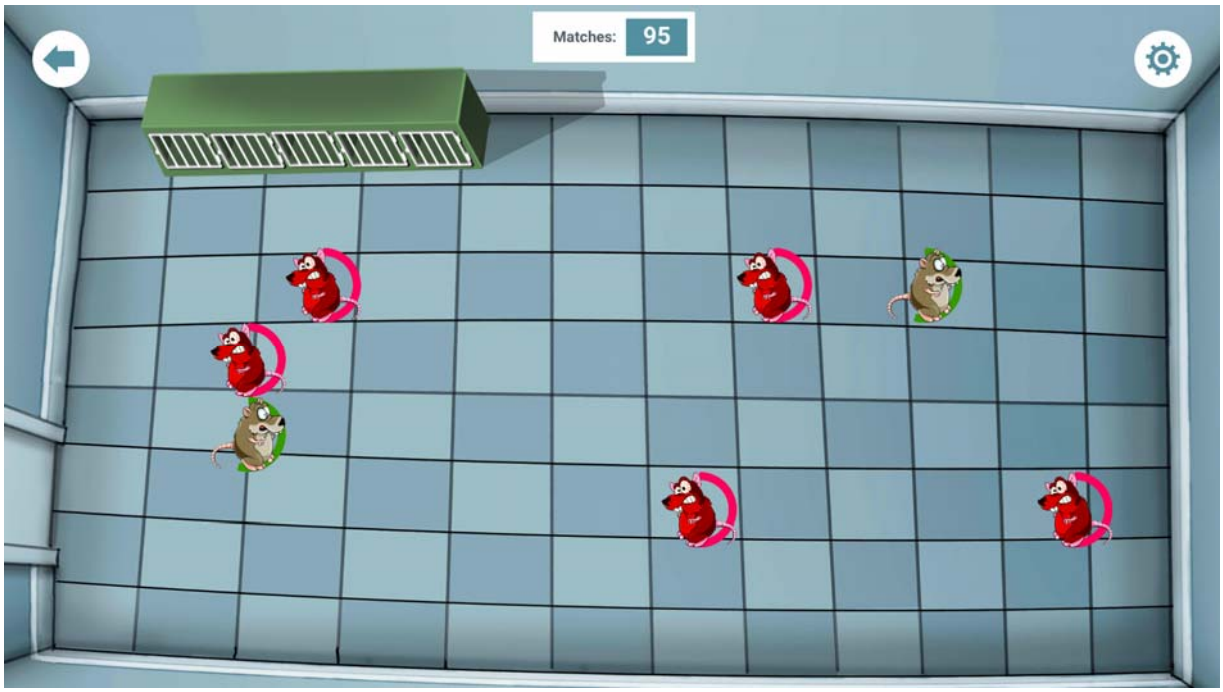
In particular, the games aim to address:
Fine Motor Skills
Hand-eye coordination
Reaction times
Selective visual attention
Spatial ability (perception in 2D)
Spatial ability (perception in 3D)
Spatial reasoning (mental rotation)
Visuospatial Working memory
Executive function: Monitoring
Executive function: Response inhibition
Executive function: prospective memory
Executive function: Planning
Visuospatial memory
Physico-mechanical reasoning of speed
Verbal (written) perception
Reading comprehension of simple instructions
Instruction compliance

Information about the games

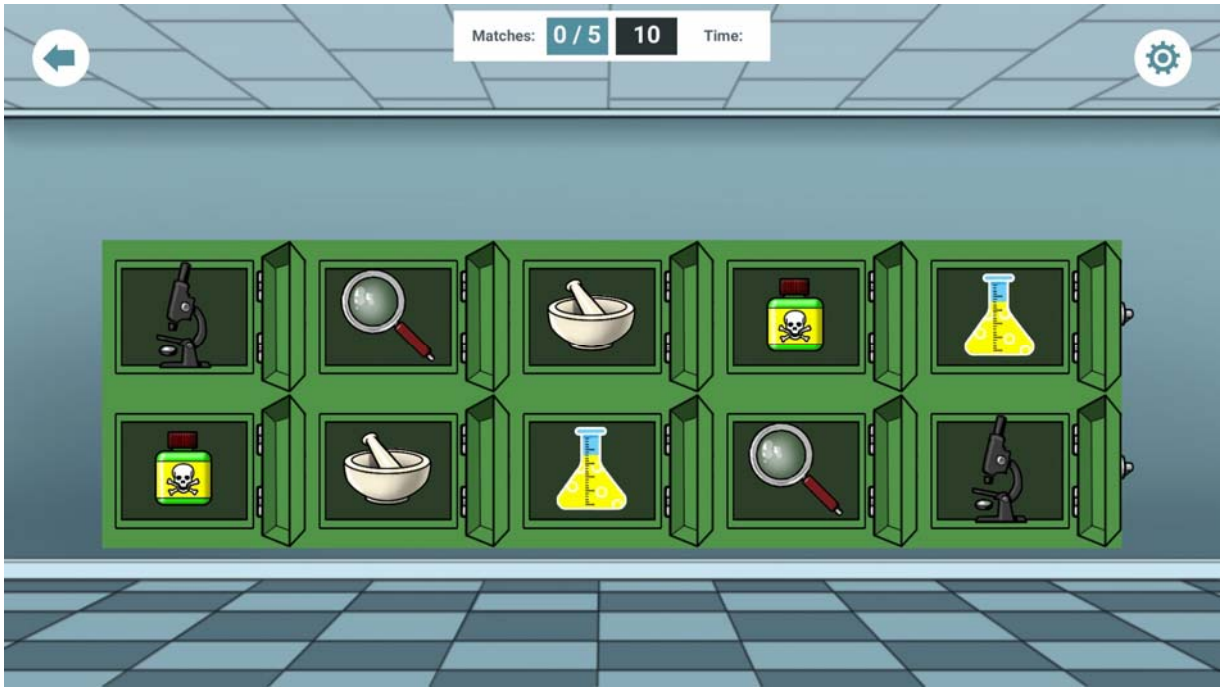
Rat Catch

The rats that Claudia, the biologist, keeps in the lab have mysteriously developed the ability to teleport out of their cages. Now they are trying to escape from the lab. Challenge your hand-eye coordination and response times while helping the biologist to catch the wicked rats!



Chemical Chaos

Someone has mixed-up all the chemicals and equipment in Luiz's chemistry lab. Now he needs help to put everything back in the right order. Challenge your visuospatial memory and help the chemist gather the right chemicals for her experiments.

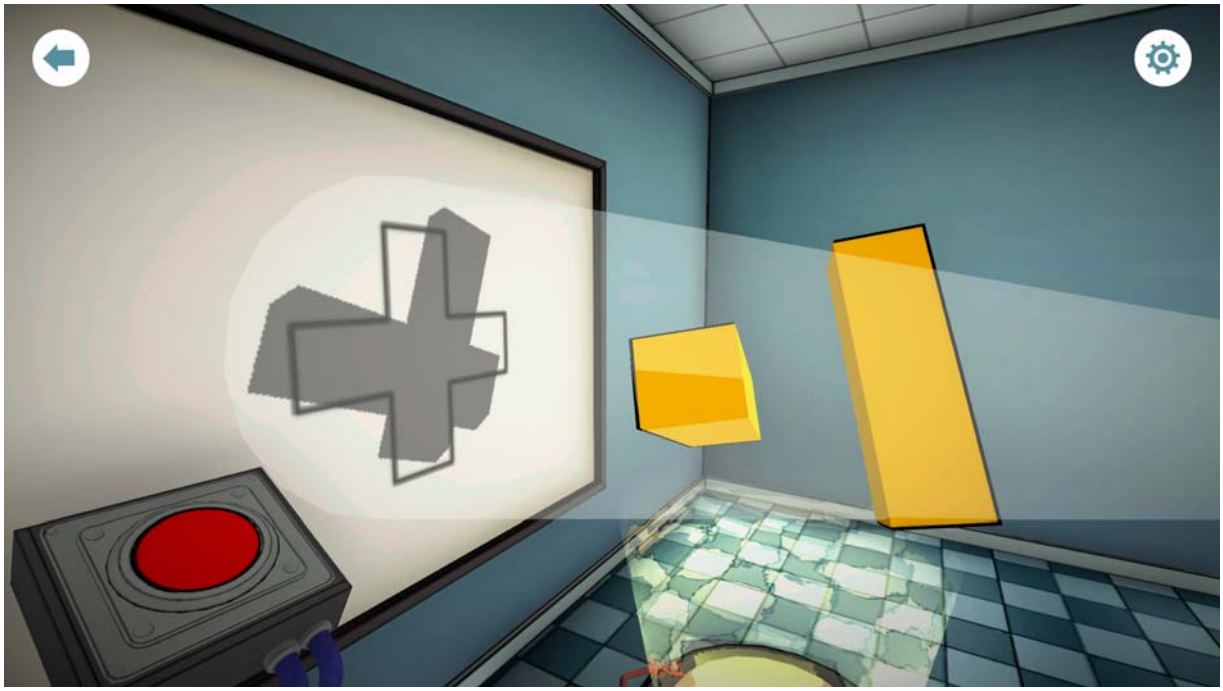


Robot Reboot

Dev, the engineer, is trying to build a robot. To do this he needs to precisely follow a series of instructions or the robot will malfunction. Challenge your reading comprehension and compliance while helping Dev with his robot.

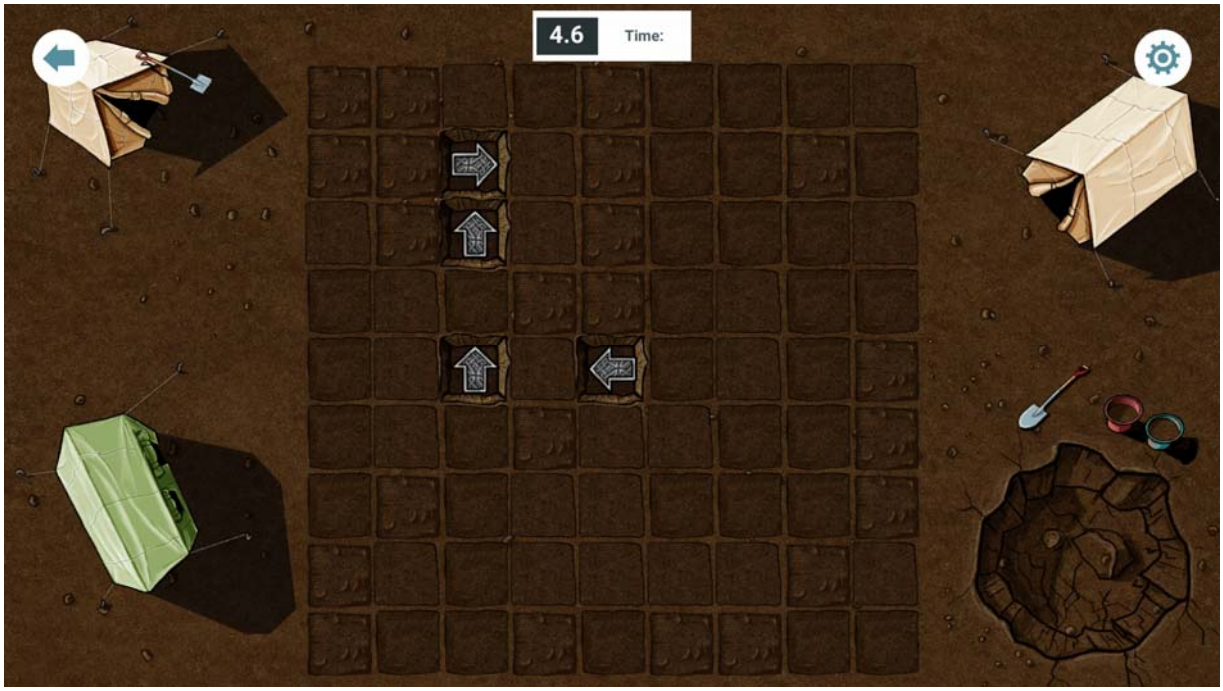
Shadow Match

Sven, the archaeologist, has found some relics, but they do not make much sense to him. He believes there may be a deeper meaning in their shadows. He needs some help rotating the relics to see if his theory is correct. Challenge your spatial rotation ability while helping the archaeologist carrying out his research.



Relic Hunt

The artifacts at Sven's archeological site have mysteriously been re-dug back into the ground. Help Sven find the artifacts again with the help of the guide machine, however, it's very expensive to use, so accuracy is essential! Challenge your visuospatial reasoning and help the archaeologist to find the clues he needs.



Electron Rush

Megumi, the physicist, is experimenting with accelerating electrons in the particle accelerator. Unfortunately, someone has been tinkering with it and the particles are not accelerating fast enough. Challenge your visuospatial reasoning and planning while helping her accelerate the particles as fast as possible for her experiment.