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Studying the psychological processes of resolving approach-avoidance conflict

Submission date	Recruitment status	[X] Prospectively registered
29/09/2015	Stopped	[ ] Protocol
Registration date	**Overall study status**	[ ] Statistical analysis plan
13/10/2015	Stopped	[ ] Results
Last Edited	**Condition category**	[ ] Individual participant data
15/11/2021	Mental and Behavioural Disorders	[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
Anxiety is a term which is used to describe feelings of worry, unease or fear. Though it is perfectly normal to feel anxious from time to time, it can become a very serious mental health problem. As well as being a mental health condition in its own right, it is a common symptom of other problems such as depression and schizophrenia. The most common type of behaviour that accompanies anxiety is an inability to make decisions. Our brains are hard-wired to automatically "avoid" situations which we see as being unpleasant and "approach" situations we see as being pleasant. This phenomenon called the approach-avoidance conflict. The approach-avoidance conflict is known to cause stress, particularly in people who are prone to feeling anxious. A common way of testing approach-avoidance in people is by using specially designed videogames, which include incentives such as collecting points (approach motivation) and deterrents such as losing points (avoidance motivation). The aim of this study is to look at approach-avoidance behaviour while playing videogames to identify signs of anxiety.

Who can participate?
600 healthy adults between 18 and 40 years of age, with normal vision.

What does the study involve?
Participants are asked to play a videogame in a number of scenarios. The first video game involves catching diamonds on a grid (approach motivation) and with the possibility of a virtual "robber" stealing these diamonds (avoidance motivation). The participants have the option of starting the game near to the robber (active start) or hidden from the robber (passive start). Video game two involves a much smaller grid of four squares, where the participant has to perform tasks in order to collect the diamonds. Participants play videogame 1 or 2 alone or with the additional components: distractions (e.g. loud noises), being able to "catch the robber" within the game, find out more information about the robber or being offered a financial incentive for winning. Throughout the period of playing the games, performance in the game is judged based on how many diamonds the participants in each group manage to collect. Participant's physical responses to playing the games, such as heart rate and breathing rate are also monitored.

What are the possible benefits and risks of participating?
Possible benefits of the study may be that those with anxiety problems will be identified and can receive treatment. There are no notable risks of participating in the study.

Where is the study run from?
Psychiatric University Hospital Zürich (Switzerland)

When is the study starting and how long is it expected to run for?
October 2015 to December 2015

Who is funding the study?
University of Zürich (Switzerland)

Who is the main contact?
Professor Dominik Bach

Contact information

Type(s)
Scientific

Contact name
Prof Dominik Bach

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Additional identifiers

Protocol serial number
AAAB

Study information

Scientific Title
Psychological mechanisms of resolving approach-avoidance conflict - a behavioural study

Study objectives
The aim of this study is to investigate, on a behavioural level, approach-avoidance conflict resolution in humans using simple computer games.

Ethics approval required

Old ethics approval format

Ethics approval(s)
Kantonale Ethikkommission Zürich, 17/07/2015, ref: KEK-ZH-2015-0169

Study design
Observational cross sectional study

Primary study design
Observational

Study type(s)
Other

Health condition(s) or problem(s) studied
Basic psychological mechanisms of resolving goal conflict

Interventions
Of the recruited 600 participants, 60 are selected to play the computer game in one of the ten experimental situations. Throughout the duration of the game psychophysiological control variables are monitored, as well as individual performance within the game.

Experiment 1: In Computer Game 1, participants have to catch diamonds on a grid (approach motivation). At the same time, there is a possibility that a virtual "robber" might wake up and take away all diamonds that the participant has collected (avoidance motivation). In each game round, one of three robbers representing different probabilities of waking up is present but inactive in a corner of the grid. The behavioural response to different levels of threat is investigated by allowing the probability of an attack to vary across trials. In the beginning of each trial the predator resides inactive in a corner of the grid, while the participant can either start in the same corner (active start) or from a “safe place” – a corner where the participant cannot be caught (passive start).

Experiment 2: Computer Game 2 is similar to Computer Game 1, but the grid is reduced to four squares. This forces participants to perform individual actions for collecting diamonds. Individual actions in this game relate to simple "Go" and "No Go" responses.

Experiment 3: Computer Game 1 with an additional aversive components (mild electrical stimulation/loud noises).

Experiment 4: Computer Game 2 with an additional aversive components (mild electrical stimulation/loud noises).

Experiment 5: Computer Game 1 with an additional possibility of "catching the robber", to assess fight/flight tendencies.

Experiment 6: Computer Game 2 with an additional possibility of "catching the robber", to assess fight/flight tendencies.

Experiment 7: Computer Game 1 with an additional possibility of sampling information about the robber, to assess risk assessment tendencies.

Experiment 8: Computer Game 2 with an additional possibility of sampling information about the robber, to assess risk assessment tendencies.

Experiment 9: Computer Game 1 with two levels of financial motivation, to disambiguate effects of "threat" from effects of financial gain.

Experiment 10: Computer Game 2 with two levels of financial motivation, to disambiguate effects of "threat" from effects of financial gain.

Intervention Type
Behavioural

Primary outcome(s)
Game performance is measured by the number of tokens collected during the 1-2 hour computer game.

Key secondary outcome(s))
The following outcomes are measured continuously while the participant is playing the video game:
1. Skin conductance responses is measured via two electrodes that are placed on the hand
2. Heart rate is measured via electrocardiogramm (ECG)
3. Respiration rate is measured via a distension-sensitive belt around the chest
4. Pupil size is measured with an eye-tracking device
5. Facial EMG is measured via two electrodes below the left eye

Completion date
31/12/2019

Reason abandoned (if study stopped)
Lack of funding/sponsorship

Eligibility

Key inclusion criteria
1. Informed Consent as documented by signature
2. Aged between 18 and 40 years
3. Normal vision

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Total final enrolment
21

Key exclusion criteria
1. Reported use of any drugs in the 2 weeks prior to the study with the exception of contraceptive drugs and incidental use of NSARs or paracetamol
2. Reported clinically significant concomitant disease states (e.g., renal failure, hepatic dysfunction, cardiovascular disease, etc.)
3. Reported history of psychiatric, neurological, dependence or systemic/rheumatic disease
4. Reported or suspected non-compliance, drug or alcohol abuse
5. Inability to follow the procedures of the study, e.g. due to language problems
6. Participation in a study with investigational drug within the 30 days preceding and during the present study
7. Previous enrolment into the current study
8. Members of the study team and their family members and dependants

Date of first enrolment
01/12/2015

Date of final enrolment
01/12/2017

Locations

Countries of recruitment
Switzerland

Study participating centre
Psychiatric University Hospital Zürich (PUK ZH)
Lenggstrasse 31
Postfach 1931
Zurich
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8032

Sponsor information

Organisation
Psychiatric University Hospital (Psychiatrische Universitätsklinik) Zürich (PUK ZH)

ROR
https://ror.org/01462r250

Funder(s)

Funder type
University/education

Funder Name
University of Zürich (Switzerland)

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request.

IPD sharing plan summary
Available on request