

Studying the psychological processes of resolving approach-avoidance conflict

Submission date 29/09/2015	Recruitment status Stopped	☒ Prospectively registered ☐ Protocol
Registration date 13/10/2015	Overall study status Stopped	☐ Statistical analysis plan ☐ Results
Last Edited 15/11/2021	Condition category Mental and Behavioural Disorders	☐ Individual participant data ☐ 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

ORCID ID

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Contact details

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8032

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 electrocardiogram (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

Switzerland

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