



Standard Operating Procedure

Work Package 4

November 2009

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1 Introduction

Work package 4 of the IMAGEN research project focuses on subject recruitment as well as psychometric and behavioural testing.

The constructs that will be measured in this WP are personality risk factors for reward-related psychopathology, psychiatric symptoms, substance use and misuse, and behavioural measures of reinforcement sensitivity (see Table 1) in adolescents. Parents will also provide information on family history of psychopathology and their own personality and substance use and domestic conflict.

The psychometric assessment battery for the IMAGEN study was developed by selecting the most widely used and cross-nationally validated instruments available in English, German and French. However, translated instruments that have not been validated for use in a particular cultural group had to undergo psychometric evaluation prior to initiation of the main study. Three research sites were responsible for validation of psychometric instruments for their respective countries, i.e. Mannheim for Germany, Paris for France, and London for the United Kingdom and Ireland. Each site conducted tests on the internal structure, test-retest reliability and, whenever possible, criterion validity of instruments that required validation. These host research centers provided translations and back-translations and piloted their new scales on an adolescent sample. Questionnaires that required cross-national validation included the SDQ and the DAWBA (in French) as well as the SURPS (in German).

A pilot study is being conducted in order to examine the psychometric properties and feasibility of a computerised home assessment procedure for collecting psychometric and behavioural data. The initial plan was to conduct the pilot in three sites, however the French site had substantial translation requirements, thus, only the German and English batteries will undergo substantial piloting. For the pilot study, samples of approximately 50 participants at each of the London and Mannheim research sites aged 14 or 15 are being recruited from secondary schools. They are being asked to participate in a home-based assessment as well as a second session either at school or at the research site. The same computerized assessment tool will be administered for both assessments in order to obtain test-retest reliability (and concurrent validity in Germany). The order of testing sessions was randomized between participants. Instruments to be evaluated for psychometric properties are those described below for the main study. For the German site, additional measures were added to assess divergent and convergent validation of the SURPS.

Table 1: Instruments used in the main study in Work package 4.

Instrument name (references)	Subject	
	Adolescent	Parent
Instrument name (references)	X	X
	X	
NEO-PI-R (NEO; Costa & McCrae, 1992)	X	X
Temperament and Character Inventory – Revised (TCI-R; Cloninger, et al. 1999)	X	X
Substance Use Risk Profile Scale (SURPS; Conrod & Woicik, 2002, Woicik et al., 2009)	X	X
Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993)	X	X
European School Survey Project on Alcohol and Drugs (ESPAD; Hibell & Andersson, 1997, Hibell et al., 2003)	X	
Fagerstrom Test for Nicotine Dependence		X

Instrument name (references)	Subject	
	Adolescent	Parent
(FTND; Heatherton et al., 1991)		
Bully Questionnaire (BULLY; Olweus, 1996)		X
Michigan Alcoholism Screening Test (MAST; Selzer, 1971)	X	
Drug Abuse Screening Test (DAST; Gavin et al., 1989, Skinner, 1982)	X	
Monetary-Choice Questionnaire (KIRBY; Kirby et al., 1999, Kirby, 2000)	X	
Emotional Dot Probe (DOT PROBE; MacLeod et al., 1986)	X	
Morphed Faces Task (IDENT; Blair et al. 2001, Pollak & Kistler, 2002)	X	X
Passive Avoidance Learning Paradigm (PALP; Arnett and Newman, 2000)	X	X
Strengths and Difficulties Questionnaire (SDQ, Goodman, 1997)		X
The Development and Well-Being Assessment Interview (DAWBA; Goodman et al., 2000)		X
Conflict Tactics Scale (CTS; Straus, 1979, Straus et al, 1996)	X	
Genetic Screening and Family History of Psychiatric Disorders Interview (GEN)	X	
Timeline-Followback Interview (TLFB; Sobell and Sobell, 1996)		X

Analysis of the pilot data will allow modifications to specific instruments to be incorporated into the battery for the main study.

Data are managed and stored locally by the IOP and Mannheim research teams. Data remain confidential and coded so that personal identifying information cannot be associated with test results.

2 Materials and Methods

For the main study, as for the pilot study, child assent and parental consent will be obtained prior to participation in the research and information revealed in the questionnaires will remain confidential, unless there is concern for the safety of the child or another person. Ethical approval will have been obtained locally for all study sites.

Materials like documents for recruitment and assessment including this SOP can be found online at <https://www.milliarium.gabo.de/Forms/Application/frmMainFrameSet.aspx> under IMAGEN/Documents and the respective folder (Institute Assessment_Material; Recruitment_Material; SOPs) or alternatively in the Workpackage 4 folder.

2.1 Psychometric and cognitive-behavioral characterization

The psychometric and cognitive-behavioral characterization of the participants will be established using the software program Psytools (John Rogers, Delosis) which is a computerized assessment platform. Psytools presents questionnaire items and response alternatives on a computer screen on any computer platform, so will be used for both home and institute-based data collection. Participants will be instructed to answer by clicking on corresponding virtual response buttons using a computer mouse. There will be a version for both the adolescent and the parent or guardian (but parents will only complete their tasks during the institute session). The order of the adolescent tasks has been chosen to mix the behavioral tasks with the questionnaires in order to implement a change in the quality and quantity of attentional effort required per task. The parent assessment will only include computerized questionnaires. Table 2 and 3 show the instruments used in both the adolescent and adult assessments.

During the computer assessment at the laboratory, a trained researcher will assist the participants in order to explain how to run the tasks, ensuring that the instructions have been properly understood. For the home assessment, the researcher will be available via phone or email. Also, at the day of the institute assessment, a researcher will then perform the researcher administered instruments and conduct the interviews.

Table 2: Instruments Constituting the Computer Assessment Battery *Psytools*

Adolescent Form

Short name	English title	German title	French title
NEO-FFI	Personality I	Persönlichkeit I	Personnalité I
IDENT	Faces task	Gesichter Aufgabe	Exercice des Visage
ESPAD+ DAST+ FTND	Drug use questionnaire	Fragebogen zum Drogenkonsum	Questionnaire d'utilisation des drogues
AUDIT	Alcohol questionnaire I	Alkoholfragebogen I	Questionnaire d'Alcool
KIRBY	Now or later?	Jetzt oder später?	Maintenant ou plus tard?
DOT_PROBE	Dot Identification Task	Punkte Erkennungs- Aufgabe	Exercice d'identification des points
TCI	Personality II	Persönlichkeit II	Personnalité II
PALP	Numbers Task I, II, III	Zahlen Aufgabe I, II, III	Exercice des Nombres I, II, III
SURPS	Personality III	Persönlichkeit III	Personnalité III
PDS	Physical Development	Körperliche Entwicklung	Développement Physique

Parent Form

Short name	English name	German name	French name
NEO-FFI	Personality I	Persönlichkeit I	Personnalité I
ESPAD+ DAST+ FTND parent	Drug use questionnaire	Fragebogen zum Drogenkonsum	Questionnaire d'utilisation des drogues
AUDIT	Alcohol questionnaire I	Alkoholfragebogen I	Questionnaire d'Alcool I
TCI	Personality II	Persönlichkeit II	Personnalité II
CTS	Relationship questionnaire	Beziehungs-fragebogen	Questionnaire relationnel
MAST	Alcohol questionnaire II	Alkoholfragebogen II	Questionnaire d'Alcool II
SURPS	Personality III	Persönlichkeit III	Personnalité III
PBQ	Pregnancy and Birth Questionnaire	Fragebogen zu Schwangerschaft und Geburt	Questionnaire de grossesse et naissance

Researcher Form

Short name	English name	German name	French name
CTS	Relationship questionnaire	Beziehungsfragebogen	Questionnaire relationnel
GEN	Family History	Familien Geschichte	Histoire de Famille
TLFB	Drug Use Diary	Drogen Tagebuch	Journal des Drogue
LEQ	Life Events	Lebensereignisse	Questionnaire des événements de vie
NI data entry	NI data entry	NI data entry	NI data entry

Note: TLFB and NI data entry: Additional variables to be added by the researcher, for a specification see Table 4
 General Note: Lists of names of instruments in different language versions and short names according to the Psytools data base.

2.2 Psychometric measures

At the start of each task within the adolescent battery, participants will be asked for their date of birth (year and month) as well as for their gender. This will check the player's identification and obtain demographic information. On one occasion, they will also be asked for their grade in school.

Furthermore, questions concerning the testing context check whether the testing situation is appropriate in terms of confidentiality and attentional focus of the child. Children will be asked questions about the testing situation, i.e. the location where they do the assessment, if they are in a hurry, the noise level, their mood, their tiredness, and if others are watching their answers. If the child's answers indicate that sufficient confidentiality and attentional focus cannot be provided in this environment, children will be given feedback in order to alter the situation or (in case there is a general problem to find an adequate place to do the home assessment) ask the research team for help.

The psychometric and cognitive-behavioural tasks are presented in an alternating pseudorandomised order. The variation of order a) promotes attentional focus by repeatedly changing the task mode over the course of the session and b) to control for task order effects.

The German and French adolescent versions included the pronouns "tu" and "Du" instead of the adult forms "vous" and "Sie" which were used in the parental tasks. This decision was formed on the basis that adolescents are usually addressed with these pronouns in their everyday lives by various people including teachers, parents, and even strangers.

Personality:

The NEO-PI-R is a valid method of assessing broad dimensions of personality (De Fruyt, et al. 2000) based on the Five-Factor Model of personality (Costa and McCrea, 1997), and was supplemented by the novelty seeking scale of the Temperament and Character Inventory – Revised (TCI-R; Cloninger, et al. 1999), to assess lower order trait dimensions more specifically related to disinhibitory psychopathology. Both personality instruments have been validated for cross-national use.

In addition, a short instrument providing quantitative measures of lower order personality traits related to psychopathology (e.g., anxiety sensitivity, thrill seeking, pessimism and impulsivity) will be included. The Substance Use Risk Profile Scale (SURPS; Conrod & Woicik, 2002) assesses levels of several personality risk factors for substance abuse/dependence and psychopathology including hopelessness, anxiety sensitivity, impulsivity and sensation seeking. The instrument is ideal to assess impulsivity and sensation seeking as separate variables and has been shown to have good convergent and discriminate validity as well as good test-retest reliability (Conrod & Woicik, 2002). A recent study by Krank et al., (submitted) demonstrates the predictive validity of this scale with respect to predicting future substance use and specific patterns of substance use over and above current substance use patterns.

The Monetary-Choice Questionnaire (KIRBY; Kirby, et al. 1999) provides a measure of preference of immediate lower over delayed higher monetary rewards. This measure asks for relative preference of one sum compared to another sum rather than asking for decisions about absolute amounts of money. Therefore, only the currency was changed for the English site but the amounts displayed are the same as the amounts displayed in Euros for the German and French sites.

Substance use and misuse:

Substance use will be assessed using the Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993), which was developed and validated by the World Health Organization to assist the brief assessment of alcohol use disorders and was specifically designed for international use. It exists in multiple languages, including German, French and English, and was validated on primary health care patients in six countries.

For drugs other than alcohol, sections of the “European School Survey Project on Alcohol and Other Drugs” (ESPAD; see e.g., Hibell & Andersson, 1997) will be used in order to obtain measures of age of onset and quantity and frequency of alcohol, and illicit drug use in one’s lifetime, past 12 months, past 30 days, and past week. It also provides a measure for bullying, both as perpetrator or victim. The bullying questions have been adapted from a questionnaire used in a large international study entitled Health Behaviour in School-aged Children (HBSC). These questions were initially utilised in the revised Olweus Bully/Victim Questionnaire (Olweus, 1996), and the Youth Risky Behaviour Survey (Brener, Collins, Kann et al. 1995). For the parents, sections of the ESPAD will be administered to assess age of onset and quantity and frequency of alcohol, and illicit drug use in one’s lifetime, past 12 months, past 30 days, and past week. For every drug they report using, parents will be asked for reports on excessive and/or problematic use, which if affirmative, will lead to additional questions on the Drug Abuse Screening Test (DAST; Skinner, 1982; Gavin et al., 1989). The DAST is one of the most widely used screening tests for drug abuse and addiction. In order to assess a more specific measure for alcohol related problems in adults, the AUDIT and Michigan Alcohol Screening Test (MAST; Selzer, 1971) will be administered to all parents. The MAST is one of the most widely accepted measures for assessing alcohol abuse, and it is designed to provide a rapid and effective screening for lifetime alcohol-related problems and alcoholism. The MAST has been used in a variety of settings with varied populations.

Additionally, the Fagerstrom Test for Nicotine Dependence (FTND; Heatherton et al., 1991) will be used to assess youth and parent nicotine dependence and smoking frequency in the past 30 days. This assessment is widely used for this purpose.

A Timeline-Followback Interview (Sobell and Sobell, 1996) will be conducted with children on the day of neuroimaging for the last 30 days on use of alcohol, tobacco and various drugs to further assess the reliability of self-report. The TLFB is a method of assessing substance use using memory prompts to optimise on the reliability and accuracy of self-report. It provides rich information on current substance use patterns.

The Pregnancy and Birth Questionnaire (PBQ, adapted from Pausova et al., 2007) assesses exposure of the child to potentially harmful conditions and substances such as maternal alcohol and cigarette use before and during pregnancy, medical/ physical conditions of child and mother as well as nutrition after birth. The questionnaire is adapted from a telephone screening used in the Saguenay Youth Study (see reference).

*** In order to emphasize the confidential nature of substance use assessment and to ensure reliable self-report, adolescent and parent participants will be reminded that self-report information is not shared with any other members of their family, that no staff will have access to their self-report information, and that the TLFB interview will be conducted without parent present.

Puberty assessment:

When imaging the adolescent brain, analyses have to take into account and therefore control for differences in developmental status between participants. As control measure, we will administer the Puberty Development Scale (PDS; Peterson et al., 1988) to reliably assess the pubertal status of our adolescent sample. This scale provides an eight-item self-report measure of physical development based on the Tanner stages with separate forms for males and females. For this scale, there are five categories of pubertal status: (1) prepubertal, (2) beginning pubertal, (3) midpubertal, (4) advanced pubertal, (5) postpubertal. Participants answer questions about their growth in stature and pubic hair, as well as menarche in females and voice changes in males. Dorn et al (1990) compared self-ratings and physician ratings of pubertal development and found significant correlations between adolescent self-rating and physician's rating (for males: $r=.77$ to $r=.84$, females: $r=.88$ to $r=.91$). In a sample of the IMAGEN PI in Nottingham, Tomas Paus, levels of bioavailable testosterone correlated with self-rated Tanner stage in boys ($r=.604$, $p<.0001$; see Figure 1).

Behavioral Problems:

The self-report and parental report versions of the Strengths and Difficulties Questionnaire (SDQ) will be used to assess 5 dimensions of youth pro-social and antisocial behaviour: emotional symptoms, conduct problems, hyperactivity/ inattention, peer relationship problems, and prosocial behaviour (Goodman, 1997).

The SDQ is a reliable and valid measure of youth emotional and behaviour symptoms, on which extreme scores are predictive of increased probability of clinician-rated psychiatric disorders and retest stability over 4-6 months (Goodman 2001). German and French versions of the SDQ exist and preliminary research suggests that these translated versions have similar internal structure to the English version (Woerner et al. 2002). Cross-national normative data are available for various countries including Germany and Great Britain, no norms are available for France yet (see <http://www.sdqinfo.com/b8.html> for reference).

General Psychopathology:

The Development and Well-Being Assessment (DAWBA, Goodman et al., 2000) is a computer-based package of questionnaires, interviews, and rating techniques designed to generate ICD-10 and DSM-IV psychiatric diagnoses on 5-16-year-olds. Non-clinical interviewers will conduct a structured interview to parents regarding psychiatric symptoms and resultant impact. But this can also be delivered by computers with close experimenter supervision if parents interviewees prefer that mode of assessment.

If definite symptoms are identified through the structured questions, interviewers will then use open-ended questions and supplementary prompts to encourage parents to describe the problems in their own words. These descriptions will be transcribed verbatim by the interviewers but will not be rated by them. Supplementary modules of the DAWBA interview will be administered to the adolescent. The different types of information will be brought together by a computer program which also predicts the likelihood of diagnosis. These computer-generated summary sheets and diagnoses form a convenient starting point for experienced clinical raters, who will then decide to either accept or overturn the computer diagnosis (or lack of diagnosis) upon reviewing all of the data, including transcripts. This instrument has been validated in various languages including English and German, the French version has recently been developed for the IMAGEN by Jean-Luc Martinot and his research team at CEA-INSERM, Orsay, France in cooperation with the author Robert Goodman.

Clinician coding of responses will be performed by a panel of raters on a yearly basis.

Exposure to domestic violence / Life events:

The Conflict Tactics Scales (CTS) is a widely used instrument for identifying domestic violence. The CTS2 (Straus, Hamby, Boney-McCoy, and Sugarman, 1996) provides a measure for violence against a partner in a dating or marital relationship. The CTS2 has scales measuring victimization and perpetration asking for three tactics that are often used in conflicts between partners: physical assault, psychological aggression, and negotiation; and scales to measure injury and sexual coercion of and by a partner. This questionnaire will be administered to the parent at the day of the institute assessment with the research assistant being present for support, for further instructions please refer to chapter 4.5.

The Life-Events Questionnaire (LEQ) is an adaptation of the Stressful Life-Event Questionnaire from Newcomb, Huber, & Bentler (1981), that was originally validated on a US sample, and was adapted to the demands of our UK/German and French sample in terms of wording. The LEQ will be applied to the adolescents during the institute assessment.

The scale uses 39 items to measure the occurrence (“ever”, “in the past year”) and the perceived desirability of events covering the following domains: Family/Parents, Accident/Illness, Sexuality, Autonomy, Deviance, Relocation, and Distress.

The questionnaire will be administered according to the instructions of the CTS (see also chapter 4.5) in a confidential and supervised setting: While the child is filling in the life-events questionnaire, a trained member of staff will be with the child, not watching their answers but offering help and support in case the child asks for it or gets distressed.

Demographic data:

The DAWBA also provides a section about family background assessing data concerning the social status and family history of psychopathology. In addition, one of the Psytools questionnaires will assess educational levels of the mother/ stepmother and the father/stepfather according to the ISCED (International Standard Classification of Education). The age of the parent or guardian and their relationship to the child will also be assessed on the day of the institute assessment and documented separately in a case report form (CRF). These data will later be entered manually into the main data base.

Genetic Screening:

A genetic screening interview (GEN, called “Family History” for the participants) will be administered by the researcher at the day of the institute assessment. Parents will be asked for place of birth and the ethnicity of the adolescent’s parents and grandparents as well as a history of psychopathology in first and second degree relatives. For instructions on how to use this researcher administered instrument, please refer to chapter 4.5.

2.3 Cognitive-behavioral Tasks

Cognitive tasks will be administered to supplement the neuropsychological assessment battery that will take be administered at the Research Centre. The following tasks have been selected on the basis that they have mild overlap with neuroimaging tasks also assessed in the main study, as well as an additional unique component. These tasks are relevant to disinhibitory psychopathology and addictive behaviour and would generally be described as tasks that assess multidimensional components of emotional behaviour. For example, tasks will assess behavioural inhibition under specific reinforcement conditions, or attentional bias to information with specific content.

All tasks were rendered into a virtual screen size of 1024*768 pixels – this would then scaled (preserving aspect ratio) to fit full screen on any monitor regardless of its native resolution. This allow to calculate approximate visual angles subtended by the stimuli.

Emotional Faces Dot-Probe Task (DOT PROBE):

An “emotional” variant of the widely used dot-probe task will be utilized. The dot-probe task indexes attentional bias for emotional stimuli (MacLeod et al., 1986). This task complements attentional capture with emotional stimuli that will be administered during the neuroimaging session. Information will also be provided on attentional biases

towards positive and negative facial expressions (i.e. socially reinforcing and punishing information), relative to neutral facial expressions.

→ Task Specifications:

Overview

Two face stimuli appear at each side of the screen followed by a probe behind one of the faces. The Subject has to respond indicating which side the probe was on.

Stimuli

20 IDs were selected from the MacBrain face set (2 5 6 7 9 10 11 12 13 14 23 26 27 28 33 36 39 40 41 43). Three emotions were employed as emotional stimuli – Happy, Anger and Fear. Neutral faces of the same ID were used as the matching stimuli. A separate ID (1) was used in the practice block.

Subjects respond using the “n” and “m” keys on the computer keyboard.

Introduction

Up to 12 trials using a Happy emotion are presented. The block terminates early if the subject manages to correctly respond to two or more trials each with the probe on the left and right sides.

After the introduction the subject is offered a chance to repeat it.

Main Test

Trials were congruent (probe appeared behind the emotional face) or incongruent (probe appearing behind the neutral face). Each ID appeared once in each emotion in both types of trial (20x3x2=120 trials). The probe position (left vs right) was counter-balanced over the whole task and within each emotion condition.

Trial Timeline

0ms - Clear Screen

0-1000ms - Display fixation stimulus

1000ms - Clear Screen

1000-2000ms - Display face stimuli

2000ms - Clear Screen

2000ms-UntilResponse - Display probe stimulus

Passive Avoidance Learning Paradigm (PALP):

This Go/No Go task is an experimental method for investigating passive avoidance learning and behavioral disinhibition in humans. Passive avoidance is defined as the ability to withhold a response that would have led to punishment. In this task subjects must learn by trial and error to respond to “good” numbers for monetary reward and withhold response to “bad” numbers to avoid punishment (loss of money) (Arnett and Newman, 2000). The standard sum to win or lose by each trial was set at 5 cents for ease of reimbursement at the end of the assessment. The different language versions were adapted to giving points rather than money, as monetary incentives are not allowed to be given to children at certain study sites for ethical reasons. German- and English-speaking participants will have the opportunity to win additional vouchers based on their performance on the task. French participants will not.

→ Task Specifications:

Adapted from the WinGo task under direction from Natalie Castellanos (IoP, London).

Overview

Series of numbers appear on the screen, subject has to decide if they should respond or not. Some numbers should be responded to other should not. The subject has to learn which is which. A running score is always displayed and the reward and punishment involve the increase or decrease of the score- they are informed that the score will influence a real monetary reward at the end of testing.

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All responses are made using the space bar.

The task is run under three of the possible four reward contingencies –

RP (responding to a “right” or active number is Rewarded and responding to a “wrong” or passive number is Punished)

RR (“right” responding to an active number is Rewarded and correctly missing a “wrong” or passive number is Rewarded)

PP (missing a “right” or active number is Punished and responding to a “wrong” or passive number is Punished)

Stimuli:

4 possible stimuli sets are used (*=right) -

17 43 54 95 26* 31* 79* 82*

28 47 62 85 14* 34* 71* 96*

04 39 61 78 19* 24* 53* 86*

08 11 57 84 29* 36* 60* 93*

See the original paper for a discussion of the reasoning behind the stimuli – it is very detailed.

Each condition is a separate task with other tasks in-between,

The stimuli set used for each condition and the order of conditions is balanced **across** the subject pool.

Introduction:

Each condition is preceded with 3 practice blocks using the stimuli 1 and 2.

In the first block the subject is forced to respond to every trial to see which stimuli is right/wrong and whether this is rewarded or punished.

In the second block the subject is forced to not respond to any trial to see how this effects the reward/punishment.

In the third block the subject is able to chose whether to respond or miss each trial.

After the introduction the subject is offered the chance to repeat it.

Main test:

First the subjects see a “pretreat” block – this is to help them learn which stimuli is right/wrong. It contains two trials of each “right” stimuli and one trial of each “wrong” stimuli, presented in a random order.

Then follows 10 test blocks, each one contains one trial for each stimuli presented in a random order.

Trial Timeline:

0 ms - Clear Screen.

0 ms - Response window opens.

0-3000 ms - Stimulus displayed centrally.

3000 ms - Response window closes.

3000 ms - Erase stimulus.

3000 ms - Feedback presented if necessary.

3000-4000ms - ITI

Morphed faces task (IDENT):

This task (Blair et al. 2001) uses stimuli from the empirically valid and reliable pictures from the Facial Affect Series (Ekman and Friesen, 1976). This series contains pictures of four facial expressions conveying different emotions (happiness, fear, sadness, and anger), which have previously been demonstrated to have socially reinforcing/punishing properties. The presentation of the expression is continued either until the end of the 20 frames, or until the participant has indicated that they are sure on five consecutive frames. Ability to recognize emotional expressions (errors and latency to detect emotion) will be recorded.

→ Task Specifications:

Based on Pollak and Kistler 2002 with new stimuli.

SOP - Materials and Methods

Overview:

A face morphed between two emotions appears on the screen and the subject has to decide which of the two emotions it looks most like.

Stimuli:

Two IDs (one male, one female) were selected from the MacBrain set (24 and 03). 4 series of morphed continua were produced in the manner described in the paper (AN->SA AN->FE HA->FE HA->SA)

Response was made with the mouse clicking one of two response buttons positioned underneath the face stimulus

Introduction:

After the instructions the participant could practice on 8 sample trials; they were then given an opportunity to repeat the instructions and practice.

Main Task:

Most of the 11 points (0 10 20 30 70 80 90 100%) for the 2 IDs on all 4 emotion continua are shown twice, with the central 3 morph points (40 50 60%) being shown 4 times. The order of the emotion labels on the response buttons is balanced within each ID/Continua/Morph Point. Trial order is randomly determined. Total number of trials = $2 \times 4 \times 2 \times (11 + 3) = 224$

Trial timeline:

0ms – Clear Screen

0-250ms – Display face border and response buttons

250ms-UntilResponse – Draw main face stimulus and response button labels

Table 3: Instruments administered under supervision at the testing centre

Adolescent

Instrument's short name	English name	German name	French name
SDQ self	Strengths and Difficulties	Stärken und Schwierigkeiten	Questionnaire Points forts - Points faibles
DAWBA	Clinical Interview	Klinisches Interview	Interview Clinique
LEQ	Life Events	Lebensereignisse	Questionnaire des événements de vie
TLFB	Drug Use Diary	Drogen Tagebuch	Journal des Drogue
MRI screening	MRI screening	MRI screening	MRI screening

Note: The TLFB will be administered as paper version and results will be entered to the data base later on (see Table 4). It includes the MRI screening which will be administered on every day of scanning for the child.

Parent

Instrument's short name	English name	German name	French name
SDQ parent	Strengths and Difficulties	Stärken und Schwierigkeiten	Questionnaire Points forts - Points faibles
DAWBA	Clinical Interview	Klinisches Interview	Interview Clinique
CTS	Relationship questionnaire	Beziehungsfragebogen	Questionnaire relationnel
GEN	Family History	Familien Geschichte	Histoire de Famille

General Note: The SDQ and the DAWBA will be assessed using a software program provided by Robert Goodman.

SOP - Materials and Methods

Table 4: Data entered at a later point to the data flow by the researcher

Name of instrument	Data
BMI	Height and weight
WISC IV	Test Results
Pegboard	Test Results
Time Line Follow Back	Diary Entries

3 Recruitment

A sample with significant ethnic heterogeneity will greatly reduce our power to detect small but relevant genetic effects on brain and behaviour. According to the Genetics WP, there is considerable uncertainty about how to deal with this problem in a whole genome analysis where pathway level analyses will be undertaken, whereas for an isolated candidate gene approach several methods can be used. For example, in the Wellcome Trust Case Control Consortium whole genome association scan individuals without European ancestry had to be excluded from the final analyses as no satisfactory way was found to correct for this effect (www.wtccc.org.uk; WTCCC, 2007), despite their considerable statistical armamentarium. Thus, our ability to compensate for ethnic heterogeneity is compromised by the reduction in power caused by the transition of IMAGEN from a candidate gene approach to a whole genome association approach.

Therefore, we now need to maximize our power by minimising ethnic heterogeneity through preferential sampling of adolescents with European ethnicity. The gold standard for the identification of ethnicity is to select those adolescents whose four grand parents were born in the country of recruitment. While this standard should be met wherever possible, we appreciate that this may lead to difficulties in implementation due to social, logistic and financial reasons. Therefore, in order to address possible ethnic heterogeneity we will use ancestry informative markers selected for various populations. It may then be possible to include individuals who are only partially distinct, e.g. Turkish or North African individuals or individuals with predominant Caucasian and minority African/Asian heritage, if we find we can correct for any ancestry-specific confounding. However, individuals that are genetically very different from the majority of the sample will most probably have to be removed from the analysis. Therefore, each site will be encouraged to adopt a recruitment strategy that allows for the recruitment of an ethnically homogeneous sample. We recognise that at research sites in areas with much ethnic diversity, this may prove to be politically or practically difficult. Each site is free to develop their own recruitment plan, all of them included in section 3.5 of this document. The following are some suggestions for successful recruitment of school-age children.

3.1 Recommended recruitment procedures

Mainstream schools

One of the best and most efficient ways to recruit school-aged children is to promote the study in schools. We have developed a youth-oriented web-site, which includes information about each aspect of the study, and a film about DNA sampling and neuroimaging assessment. We recommend that research teams contact schools in geographically appropriate areas (those with limited ethnic diversity) and request that researchers conduct a grade-wide promotional session (either in assembly format or by going from classroom to classroom). The website and film will serve as useful tools when promoting the study in schools. Researchers can either distribute information sheets and consent form packages to all students, or collect names and contact details from students who indicate interest in the study, who are then sent the information package by mail.

Special Schools for Excluded Children

While we will attempt to recruit an ethnically homogenous sample, we do want to allow for some diversity with respect to academic, behavioural and emotional functioning. Therefore, we encourage sites who are recruiting from schools to make sure that children in special schools are also included in the sample.

State vs. Independent Schools

We encourage recruitment from both types of schools and ideally, each site will have state, independent and special schools represented in their recruitment strategy.

Alternative recruitment strategies would include identifying youth through youth-oriented activities, such as youth groups, athletics teams, and youth-focused bulletin boards, magazines and websites, as long as the research site can monitor/estimate circulation and hit rates.

Recruitment website

A website is available at <http://www.imagen-info.com> to introduce the study to adolescents, parents and schools. It provides study site specific links that provide information including contact details, maps, an introduction of the research site and the research team, a contact form to sign in, as well as a film clip about the procedure on the day of the institute assessment. The sections address confidentiality, benefits, safety and the study objectives amongst others. The link will be distributed with the recruitment material.

3.2 Documenting recruitment activities

To be able to describe our samples and how they represent the populations from which they were recruited, each site must document their recruitment activities. We will provide a spreadsheet template that will help researchers record the number of sites/locations/advertisements targeted, the estimated circulation or hit rate of the advertisement, number of information sheets and consent forms distributed, and number of consent forms received. A second database will serve to record contact information for interested and recruited participants. This database will be password locked and will also be used to record the Delosis and DAWBA code keys assigned to participants, and their progress through the study (including testing date and follow-up due date).

3.3 Incentives

The more incentives offered to participants in this study, the more successful recruitment will be. Incentives should not only target youth, but participating schools, parents and school contacts. We have found that one very successful way of recruiting schools to research projects is to offer, in return for their cooperation, presentations to students on careers in psychology, medicine or neuroscience. Providing resources for high risk or substance using youth is another effective strategy. For example, offering to consult on the school's drug prevention strategy, offering to deliver evidence-based group interventions for substance abuse/prevention, or providing referrals for problem students are very attractive incentives for schools.

Some schools find it attractive to be linked with research projects such as IMAGEN and would want to be listed on our website as a participating school. Other schools take the position that any association with a research on substance use may provide parents with the impression that their school has a particular drug problem. Such schools may request anonymity and this should be respected.

We may also want to use the multi-national nature of this study as an incentive, by offering to put schools in contact, possibly around a young-scientist theme. For example, we could support an international science competition, perhaps one focusing on brain sciences, and the winner of the competition could be invited to present at our annual conference.

Incentives for adolescents will be handled in a site-specific manner in order to meet the varying demands of the local ethical committees. At the London site, incentives include vouchers to local retailers. It is helpful to allow participants a choice of the type of voucher they will be compensated with. For example, we find that girls are very motivated by vouchers for clothing shops or book stores, whereas boys are more interested in music or sports vouchers. Other incentives for adolescents at the London site will include feedback on personality measures. In order to offer salient incentives for the adolescents in all study sites including those to where it is not allowed to give monetary reimbursement, adolescents will be provided with credits for music downloads.

Incentives for parents will be monetary but may also include personality assessment feedback and an opportunity to be exposed to current knowledge and research on adolescent health.

All incentives including travel costs shall not exceed €45 per family. Apart from this restriction, every research site may decide on how to distribute the money between the child and the parent and/or between vouchers, food and travel reimbursement etc.

3.4 Consent

Information packs will be provided to youth who indicate interest in the study. The package will contain personal data sheet (to collect contact information) as well as study information sheets and consent forms, one for the adolescent and one for the parent or guardian. If sent by mail, a cover letter and a self addressed envelope (to be sent back to the research centre) will also be included. If there are already contact details available, pupils can be contacted via email or telephone some days later in order to remind them to send the signed forms back and to answer any further questions they or their parents might want to ask about the study.

After receiving both signed informed consent forms, the group code (family ID) are assigned to the family.

3.5 Screening for Exclusion Criteria

Parent Questionnaire:

The parents complete a questionnaire immediately following completing the consent form, both of which will be returned to the research centre, before including participants in the study. This questionnaire will ask parents to report on the presence of any medical conditions which may indicate exclusion from the study especially regarding genetic analyses and MRI contraindications. Any queries will be discussed between the researchers and parents over the phone. The English version of the parent questionnaire is appended to this document.

Screening for MRI contraindications on day of the scanning:

A screening for MRI exclusion criteria will also be administered to every child on the day of the MRI scan. If the child takes part in MRI scans at two different days, the screening will be repeated on the second scanning day. The questions consider pregnancy for girls or non-removable piercings and tattoos. As parent and child fill in the regular MRI screening form together on the day of scanning at the London site, disclosure of the child might not be warranted.

For all study sites with a similar MRI screening set-up we therefore recommend to provide confidential surroundings for the child by asking them for the exclusion criteria again in a face-to-face situation with the researcher will be administered before the actual Time-Line-Follow Back interview. Such a screening section template is included at the beginning of the TLFB documents. Please refer to section 4.5 for further instructions on how to handle exclusion on the day of scanning with special consideration of confidentiality.

The London version of the screening is included in the TLFB interview sheets which can be found in the appendix.

3.6 Site specific recruitment strategies

3.6.1 London

Considering the extent of ethnic diversity in the population of London, and the fact that we do not wish to exclude any potential participant from the study due to ethnic or racial background, we will recruit adolescents from geographic areas with minimal ethnic diversity. This criterion is met in the county of Kent, where 95% of the population are white (Office for National Statistics Consensus, 2001, online source). Also, its western boroughs are considered close enough to travel to the London research institute within a reasonable amount of time and effort given the limiting factor duration of the institute assessment.

All participants, regardless of ethnic background who are recruited from Kent as the target geographic area will be invited to participate in the study and treated equally. Within the selected boroughs, all schools, children and families will be treated equally and invited to participate if they meet the other stated inclusion and exclusion criteria of the study.

The target boroughs in Kent were selected based on the travel duration not exceeding 1.5 hours to the London research institute.

We will address secondary schools and Pupil Referral Units for pupils to recruit youth prone to truancy to capture a particularly problematic slice of the population and to ensure representativeness. We will invite them to take part in the IMAGEN study by sending an invitation letter that shortly describes the aims of the study, the benefits for the schools and the support we ask for. It also includes a DVD of the recruitment film and the link to the recruitment website. We will then call the schools, answer any questions and arrange a meeting with the responsible teaching staff to give a presentation at their school.

Once a school has agreed to participate, we will conduct a grade-wide promotional session (either in assembly format or by going from classroom to classroom) in which the website and film will serve as useful tools when promoting the study in schools. We will distribute information sheets and consent form packages to all students and also collect names and contact details from students who indicate interest in the study, to call them as a reminder and to answer any further questions about the study and their participation. We also consider sending information packages by mail.

As incentives we offer the schools presentations to students on careers in psychology, medicine or neuroscience, and to list them on our website as a participating school.

We will set up an international science competition, perhaps one focusing on brain sciences, and the winner of the competition could be invited to present at our annual conference. The actual strategy and basic conditions of the competition will have to be elaborated in more detail.

Incentives at the London site include vouchers to local retailers. Other incentives for adolescents at the London site will include feedback on personality measures if requested. Incentives for parents will be monetary but may also include personality assessment feedback and an opportunity to be exposed to current knowledge and research on adolescent health. Also, any travel cost will be reimbursed.

3.6.2 Nottingham

School recruitment.

Schools within Nottinghamshire will be approached, each with approval from the appropriate Local Education Authority, inviting them to participate in our recruitment activities which are described in the next section, 'Adolescent recruitment'.

Participating schools will be offered a range of incentives including access to a brain awareness week (organized by our team and held at our laboratories), careers talks from some of our team members and classroom day tours of our working environment. Materials will also be offered to schools, which could potentially be used as educational aids (including brain scan images). Schools will also be informed of the outcomes of the overall study once it is complete.

Adolescent recruitment.

When recruiting students from schools, researchers will introduce the objectives of the study to students and emphasize details on the confidential and voluntary nature of their participation in the study. The study will be presented through a range of activities including a brain-science related classroom presentation, advertisement within school newsletters / websites and via presentations during school parent evenings (when full support from the relevant school is provided for each).

Incentives for student participants will include 60 pounds cash (and 20 pounds for parents) and a printout / animated gif / video of their brain scan image(s). The monetary incentives include travel costs to facilitate attendance to scanning sessions.

Finally, extra effort will be made to recruit adolescents prone to truancy to capture a particularly problematic slice of the population and to ensure representation. Educational psychology and school special unit services will be involved to advise on where and how best to recruit these adolescents.

Students who indicate interest in the study will be asked to provide mailing details so that a consent package can be sent to their parents (schools may be asked to provide contact details for parents, dependent on the preference on each head teacher). This package will include brochure briefly detailing the project (the graphical layout is still in design, but the content can be seen in Appendix 3) and a permission to initiate a telephone interview (Appendix 8).

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Upon returning the signed permission to initiate a telephone interview, parents will be contacted via telephone to administer an exclusion-inclusion criteria questionnaire and to have the study explained further. Qualifying volunteers will then be sent a further package containing written descriptions of the study, (Appendices 4 and 5) consent and assent forms (Appendices 6 and 7) and the PsyTools software installation instructions (this package is downloaded from the internet, unless families request a CD). Once the consent and assent forms have been signed and returned to us, we will provide the families with parent and adolescent access codes for the PsyTools software and also agree a date for their day visit to the Brain and Body Centre.

Identifying Schools based on preferred inclusion criteria.

The ofsted reports for all schools in Nottinghamshire have been reviewed, identifying schools that have the lowest ethnic mix.

Access to school absentees.

We are currently making contact with a number of council linked and independent groups who may be able to provide links to youth centres or similar. Once links have been made and the value of these contacts verified an update will be provided.

3.6.3 Dublin

A comprehensive list of post primary schools in the Dublin city area, updated for the year 2006/2007, was sourced from the Department of Education and Science's website:

<http://www.education.ie/home/home.jsp?pcategory=10917&ecategory=12016&language=EN>

This website contains the following demographics about each school:

Contact Information	
	Name of school
	Address
	Telephone & Fax no.
	Email address
	Website
	Roll no.
	Catchment area
Other Information	
	Gender of pupils
	Number of pupils
	School's denomination, i.e. Catholic / Protestant...
	Language pupils are taught through, i.e. Gaelic or English
	Boarding / not boarding
	Fee paying / not fee paying

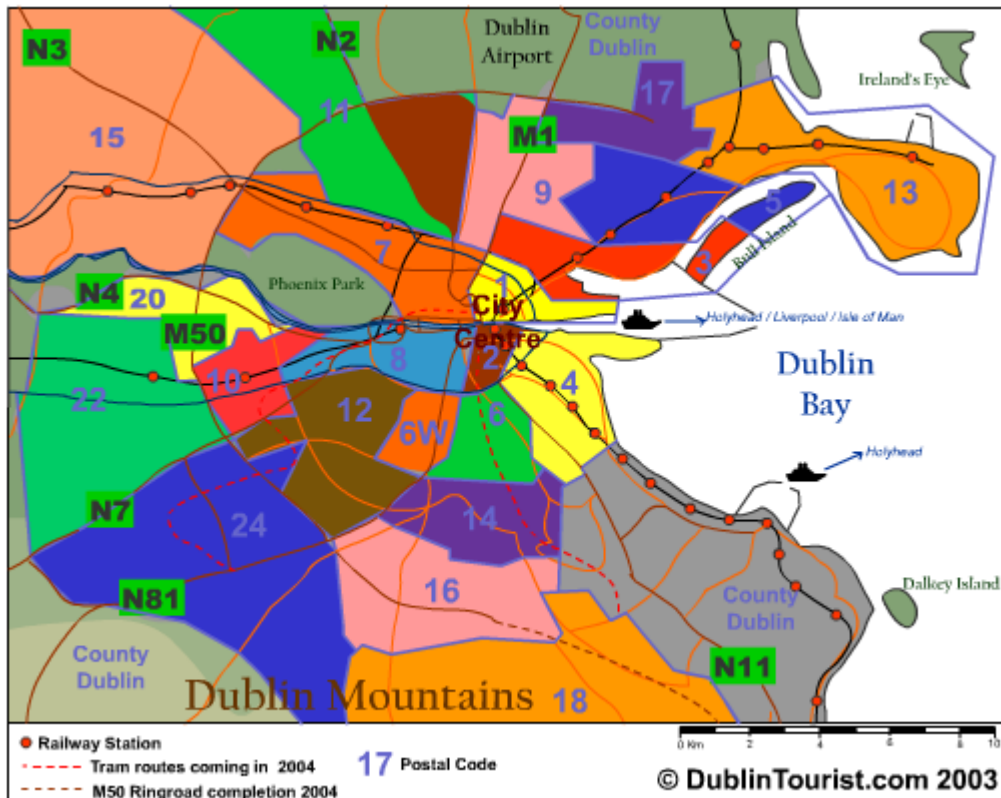
The Department of Education and Science's website also contains a list of special schools in the Dublin city area. These were not differentiated in terms of whether they catered for post-primary or primary school aged pupils, so each school name was entered into an internet search engine and the information retrieved to determine the age-group of the students. Demographic information on these special schools was limited to the school's name, address, telephone number and roll number.

In terms of deciding on districts from which to select schools, an initial obvious option was to do this by catchment area. However, on examination of these areas, it was noted that they were not geographically based, with for example, all non-Catholic schools being classified under one catchment area, irrespective of their location. Another option was to approach all schools that fell within particular Dublin postcodes. Dublin city is divided into 21 postal code regions, with even numbers located to the south of the city's main river, the River Liffey, and odd numbers located to the North, as is depicted in the map below, sourced from www.dublinfo.com.

Four postal code regions were selected, based on several factors:

- The regions' location in the suburbs of Dublin city guaranteed greater ethnic homogeneity than in the city centre.
- The regions had good transport infrastructure to and from the city centre, facilitating the research team's journeys to schools and participants' journeys to the research centre.
- Several friends and colleagues of the research team have links to the schools in these areas, which should increase the likelihood of the schools' participation in the project.

Map of Dublin's Post Codes



The regions selected were Dublin 3, Dublin 4, Dublin 6 and Dublin 9. Within these four regions, there are a total of 27 post primary schools with a total of 12,593 pupils (5,650 boys, 6,943 girls) in addition to 4/5 special schools. Given pupils at post primary level are aged between 12-18 years, we estimated that the total number of 14 year olds in these schools would be approximately 1,799 (807 boys, 992 girls) and with an expected participation rate at 10% we would estimate that these four regions would provide us with approximately 180 participants (81 boys, 99 girls) per year. If recruitment within these four regions does not satisfy the recruitment criterion for any one year, we will expand the recruitment to other suitable postal code regions.

3.6.4 Hamburg

We will start promoting the recruitment by contacting the principals of the selected schools (see below). In order to facilitate this first contact, we have developed a letter with the main information about the project, which will be sent by mail or post. Our selected schools have web pages where we can find the contact details of the principals and teachers. Additionally, we will make telephone calls to ask about an appointment with the principals and/or teachers so that we could present personally the project. For this presentation we have been developing slides, flyers and a poster containing detailed information about the project and the benefits for the school in participating in the project. We are planning to offer to the schools the following benefits:

- A volunteer to speak to classrooms about neuroscience careers. Few young people are aware of the profession, and this encounter may be the first time many of them have ever met a neuroscientist.

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- Invitation for students to visit our institute as part of a career-day field trip. We will propose to a small group of students an open house schedule, and strive to impress them with the technology and teamwork at our facility. In some schools in Hamburg there is a similar program that is called "Shadowing Tag".
- We will also offer to the schools the possibility of taking part in drug prevention programs and working closely with educational programs. More and more schools are under pressure to educate their students about substance abuse. In order to offer the schools the opportunity of taking part in drug prevention activities, we have already made contact with the "Büro für Suchtprävention" (drug prevention office) in Hamburg. The "Büro für Suchtprävention" is part of the Hamburg supervisory school authority ("Schulbehörde").

Furthermore, we will ask the heads of the selected schools about the possibility of:

- making a short project presentation following by the IMAGEN-video exhibition in the classrooms;
- distributing our material for the kids;
- fixing posters and flyers on pin boards at the classrooms or facilities rooms;
- participating in the periodically parental meeting with the possibility of introducing the project also directly to the parents.

Whenever possible we will try to gain the involvement of supportive adults by asking adults (teachers, counselors, sport teachers) to nominate youth. Adult nominators often spot students who would be good participants, but who might not necessarily apply on their own. We will also ask a couple of teens (and parents of teens) to review our recruitment materials before distributing them. They can tell us if the materials are youth-friendly and appealing.

Strategy for non-mainstream schools

We will select some special schools in the same districts of our selected mainstream schools. The approach strategy for these teenagers will be based in our recruitment agenda with emphasis in drug prevention. Accordingly, we will offer to these kids also the possibility of participating in drug prevention programs. In addition, we will try to recruit through other community organizations, social services providers, parks, recreation and sport departments.

Whenever possible, we will send information to staff members who work directly with youth. For example, we have in mind not to limit sending materials only to the principals; we intend to include also counselors, teachers, and coordinators of special programs.

Selected districts and schools

The Hamburg supervisory school authority and the "Büro für Suchtprävention" are going to assist us with the appropriated selection of districts, schools and special schools and possibly with the first contact with principals and teachers.

3.6.5 Mannheim

- Contact with education officials in Mannheim (responsibilities for junior and lower and middle level senior schools in Mannheim). Presentation of study.
- Contact with government officials from the department of education and training in Karlsruhe (responsibilities for higher level senior schools in Baden-Württemberg). Presentation of study.
- Contact with headteachers of higher level senior schools in Mannheim. Presentation of study.
- Graded contact with individual headteachers at the Mannheim schools.

Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7
Presentation of study School A						
	Recruitment School A					
		Presentation of Study School B				
			Recruitment School B			
				Presentation of study School C		
					Recruitment School C	

1. Parents evening for year 8 to discuss psychiatric illnesses in children and adolescents, or parents evening to discuss the danger of addiction in adolescents, with a presentation of the study at the end of the evening.
2. Contact with biology teachers. Presentation of the study on request during biology teaching together with a talk:
 - careers Presentation for child and adolescent psychiatry/psychology at high level senior schools
 - careers Presentation for child and adolescent psychiatry at middle level senior schools or
 - presentation regarding the danger of addiction and its prevention at all schools.

Distribution of study participant information and consent forms

3.6.6 Berlin

In order to recruit a representative sample of up to 300 14-year old adolescents from the Berlin area, we will approach students directly via school directors and indirectly via local politicians responsible for education.

We directly recruit students by contacting various schools via their director and by offering an information-event about addiction to the school for students, parents and teachers in combination with an information and recruiting campaign for the IMAGEN-project. An additional campaign should raise the motivation of the schools to invite us and improve cooperation with these schools. Currently we have collected a large sample of addresses of all kind of schools (Gymnasium, Realschule, Berufsschule, Gesamtschule, Hauptschule) in the complete region of Berlin. Special attention is directed to schools that are already in contact with the Charité via the "Center for early psychosis detection" [Früherkennungszentrum]. Teachers from these schools are known as being interested and reliable contacts for our staff. Besides recruiting students from the mainstream schools, we have also included schools for students with learning-disabilities (Sonderschule) and will contact social workers of various districts to approach youth-centers (Jugendzentren).

In a parallel manner, we will inform politicians and administrators for education of the region Berlin in a "top-down" way, thus making the imagen project known in a highly official way. This should give a feeling of safety and high priority to the directors and other responsible staff of the individual schools.

While the "top-down"-contacting will be done by the PI personally, the complete crew of workers will approach the individual schools/directors and lead the addiction-information event/imagen-information event.

We have now finished sampling addresses and contact names of schools, directors and various politicians/administrators and are ready to approach them after final ethical questions are cleared. Details of the additional addiction campaign are being discussed presently. All profound steps and experiences are being discussed with other sites, especially with Hamburg.

3.6.7 Dresden

We will recruit the volunteers of our study with the help of the local registration office (Einwohnermeldeamt). For this purpose we contact the registration office and apply for the cost free information about addresses of families with adolescents at the age of fourteen. After getting the addresses we send a first information/ invitation letter to each family and after a few days we will contact the families via phone to invite them for an information evening (no more than ten families at once) in the rooms of our institute.

The evening is structured as follows:

1. Introduction into the project
2. Recruitment film
3. Detailed information about the project
 - a. aims of the study
 - b. course of actions/ timecourse
 - c. confidentiality
 - d. risks/ gains
4. Questions of potential participants and their families
5. Distribution of information materials
6. Collecting names of interested families/ make an appointment

Due to the fact, that we recruit the sample this representative way, we won't need any further mechanism to ensure a broad range of participants characteristics.

Strategy for recruitment in Dresden (amendment April 2008):

1. Contact [supervisory school authority](#) (Sächsische Bildungsagentur, district Dresden): Information about aims and procedure of the IMAGEN-Project and clarify cooperativeness
2. Contact Statistisches Landesamt Dresden: Request for data collection of all seven and eight forms in mainstream and non-mainstream schools in the Dresden area
3. Until now: Contact two headteachers of mainstream schools (Gymnasium & Mittelschule) nearby the Neuroimaging Centre of the Technical University; confirm the Sächsische Bildungsagentur about the general will of these schools to cooperate.
4. Standard recruitment-procedure in all selected schools after the first contact:
 - Personal call to the person in charge and/ or the specific form masters: Presentation of the Project and discussion about the concerted action
 - Activities in the classroom (according to circumstances): general lecture in human cognitive and brain science (options, limits and how important it is to research the maturational status), project information, handing out information-letters and collecting addresses of potential participants
5. Further activities for interested families (two options eligible): (1) Take part in an information-evening at the Neuroimaging-Centre (see the Centre, get more information e.g. about exclusion-criteria, receive consent forms and make a further date agreement for the first screening and download-instructions for Psytools) or (2) detailed information, first screening and date agreements over the telephone and exchange of consent forms and later Psytools-Codes by post.

3.6.8 Paris/Orsay

The contacts regarding schools are following the procedure below. The "recteur" (supervises the schools from the south and west of Paris) has been approached personally and a meeting will take place.

A brochure has been designed, presenting succinctly the study, with the help of our communication department and the feed back of adolescents and an epidemiologist of adolescence. This department is implementing images of the French research facilities in the films provided at the WP4 London October meeting. This department has contacts with schools of the Essonne area, from previous collaborations. Based on their feedback, schools will be retained that might fit with the multiple requirements of the Imagen project. A first group of schools is affiliated with the cities of Orsay, Bures, Gif, Chevreuse, and St Michel. The principal of one of these schools will be approached to present the study. The parent associations representatives will be contacted afterwards. A CA formal meeting will be organised to present the study. Then, a meeting with selected classes will be organised. This procedure will be followed successively college by college depending on the research progression.

4 Operation procedure for using the Computer Assessment Battery

4.1 General data collection procedure

The proposed research will involve web-based assessments of the adolescents following signed consent by their parents and signed assent of the adolescent. Data will be collected using Psytools, a coordinated system for the psychometric data-collection and maintenance of database developed for this particular project by "Delosis", which was designed for the purposes of multi-site, multi-lingual projects. This assessment can take place remotely in the participants home, or in a quiet testing setting such as a school classroom or the research centre.

The consented participants will be given a document providing instructions including a data-base identification code and an internet link to download the psychometric battery in a computerized format (see appendix – download instructions for Psytools home assessment). The participants could complete the assessment battery at their own leisure, but will be given a maximum timeframe in which to complete the tasks (2 weeks). Upon completion of the test battery, data will be sent automatically via internet to the Delosis database next time the individual connects to the internet. This method of psychometric data collection has already been successfully employed in two large-scale, population based studies and it was also used when participants did not have access to a home computer. Some sites also chose to complete this assessment at school in a class-wide assessment session. Researchers at the research centre will be in contact with participants to help arrange alternative testing session if home assessment is not possible.

Part of the behavioural assessment will also take place on the day of neuroimaging assessment. This includes the clinical interview DAWBA and SDQ (administered to parents and children separately), as well as the TLFB (child only). The SDQ and the DAWBA will be assessed using a computer based system provided by Robert Goodman under supervision of the researchers. The self-report SDQ is incorporated into the DAWBA interview. The interviewer will enter www.dawba.net, choose the adequate language, and enter the ID and password. The interviewer will then assist with any questions of the participants on the content of the items and the handling of the program.

Parents will also be asked to complete a brief assessment battery at the research institute detailing personality, substance use, domestic conflict and family history of psychiatric problems. For this part of the assessment, the parent version of Psytools will be administered with the instrument listed in Table 3.

The DAWBA and the TLFB as well as the genetic screening will be assessed by trained interviewers from the research team.

4.2 Detailed operating procedure guide

Delosis – Psytools administration:

Every installation of the programme *Psytools* needs a so-called 'Player Code' and 'Player Key' to enable installation on a computer. Each study site receives a list of player codes and keys to pass it to the participants from John Rogers/ Delosis. Every "family" (consisting of the child and their parent or guardian) receives an individual code and key for home assessment. Furthermore, each study site receives one specific player code and key for installing Psytools at the research centre which enables the researchers to conduct the assessments at the centre.

HOME ASSESSMENT: After obtaining informed consent, the participants will be sent an instruction letter providing a player code and key specific to their family (compiling access to the teenager and their parent) and information about the website link where the programme can be downloaded from.

The links to download the *Psytools* programme are:

1. for the English site <http://www.imagen-europe.com/study-english/>,
2. for the German site <http://www.imagen-europe.com/study-deutsch/>,
3. for the French site <http://www.imagen-europe.com/study-francais/>.

SOP - Operation procedure for using the Computer Assessment Battery

The children click on the download button on the website, follow the download instructions and enter the player code and key to finish the installation on their computer. Then they choose their subjective ID named "child" from the drop down menu (listing "child" and "parent") and enter an individual password to log into the Psytools programme. There, all tasks for the teenager's home assessment are displayed. After playing all the tasks, teenagers log out, and the results will be automatically sent to the Delosis database as long as connection to the internet is provided.

The results of the child's home assessment including variables for reliability check can be accessed online (see section 5.0).

In the case that parental assessment cannot be finished at the institute assessment date, the parents can log in at home like their child choosing their subjective ID named "parent" and enter their individual password provided to them at the institute assessment day. But we repeat that prefer that parents complete the DAWBA and CTS under supervision.

INSTITUTE/LAB ASSESSMENT: Each research site installs Psytools from the website listed above using a specific player code and key.

Player Code: a4ju
Player Key: xxdp

This installation enables the researchers to access the "child", "parent" and the "institute" log-in for every "family" at their research site. For the parental self assessment, researchers enter the family code and parent ID from the drop down menu. The parent will be handed over an ID card containing their individual password to access the tasks for the parental self assessment. This password could also be used to finalise the parental assessment at home if time expires at the institute assessment day although this is not recommended.

The "institute" log-in provides all tasks for the interactive questionnaires like the TLFB for the child and the Genetic screening for the parent. Furthermore, it shows data input forms for entering the participant's results in the neuropsychological tests.

A template for the Psytools home assessment instruction letter in English is attached in the Appendix.

4.3 Home Assessment

The home assessment may be done either at the participant's home, at the school or at any other computer with internet connection available to the adolescent. If there is no such a computer available the research team can offer the adolescent to do the assessment at the research institute. Recruitment staff will call/ email/ mail the participants in order to impart the following information:

Participants will be sent:

1. Cover letter
2. Study information sheet for the parent
3. Study information sheet for the adolescent
4. A parent consent form
5. A child assent form
6. A personal data sheet asking for contact details
7. A parent questionnaire asking about exclusion criteria
8. A self-addressed envelope
9. A DVD with the recruitment film (optional)

The Study Information Sheets and the cover letter will contain the following information:

- The time frame for the home assessments and a date for the MRI session will be proposed.
- Participants will be told when and how they will receive the vouchers or other incentives.
- Participants will be informed that the researchers will check for the completion of their data sets using the internet.

SOP - Operation procedure for using the Computer Assessment Battery

- Participants will be asked to read the Study information carefully, to sign their respective forms, fill in the parent questionnaire, and return them to the research centre by mail or via their school contact.
- Participants will be informed that all data collected will be analysed anonymously by just using the codes without any names.

It is also a good idea to contact parents and walk them through the package to explain the procedure and consent and to set up a time for the imaging session.

Telephone contact:

Upon receiving signed consent forms, participant's parent questionnaire results will be checked for inclusion and exclusion criteria. Once the child will be included in the sample, dates for the computer battery assessment and the lab assessment will be set.

In order to collect and store all relevant data per family, a template excel file is provided in which all data like individual contact details, demographic data, assessment dates and codes as well as further comments will be entered. Each site will be responsible to provide a secure data storage and backup strategy of this password locked sample file ("recruitment data base.xls").

Afterwards, participants will be sent Study Instruction Sheet detailing the following points:

- Participants will be explicitly invited to call or email if they have any problems with the installation or the running of the tasks. It will be made sure they have all necessary contact information available.
- It will be emphasised that the assessment is not a test, and as such, there are no right or wrong answers.
- Prepared instruction letters containing the individual player information will then be mailed to the participants with a cover letter containing the dates of assessment schedule and contact details. If necessary, information about public transport for the MRI lab assessment session will be included.
- After 2 to 3 days, the data will be checked online (see below). The participants will be called, in order to give them verbal support for download and handling, answer questions and to remind them of the time frame for the home assessment. If necessary, the time frame/ date of MRI lab session will be adapted.
-

4.4 Assessment at the Research Institute

For the day of the MRI assessment, the adolescent and one parent or guardian will be invited. On that day, researchers from WP4 will assess the SDQ, the DAWBA and the TLFB with the adolescent and all the questionnaires and interviews listed for the parent.

A case report form (CRF) will be prepared before the institute session for each family, containing all information and material necessary for the institute assessment. It can be used as a guideline for the assessment of the family for the research team. It is set up in modules, so it is flexible in use but reliably leads through the whole assessment battery providing all necessary steps, data and forms (e.g. Psytools, DAWBA, and barcode and child, parent and researcher passwords). The family files are organized by means of the CRF and contain personal details as well as codes so these files have to be handled with special care regarding confidentiality and secure storage. A template of the CRF in English language will be made available to all sites as soon as it is ready. It might be modified in order to adapt it to local conditions.

A sample timetable for the institute assessment is provided online. It not only lists the time and tasks but also the facilities and staff needed. We recommend testing 2 families at a time (one child and one parent each). This will require one person for WP4, one person for WP 6, and one radiographer available, as well as 3 rooms with PCs and internet connection for independent assessments.

DAWBA and SDQ procedure

Assessment:

The SDQ and the DAWBA will be assessed using a computer based system provided by Robert Goodman under supervision of the researchers. The self-report SDQ will be automatically given to all adolescents prior to starting the DAWBA itself. The interviewer will enter www.dawba.net, choose the adequate language, and enter the ID and password.

The interviewer supervises the DAWBA and SDQ administration of the child and the parent in a way that they make sure the participants understand the questions and answering options, the handling of the programme and are around if questions come up during the assessment. The researcher is not meant to watch the child or parent answering or to be present at all time. To facilitate feedback and questions by the participants, paper sheets and pencils will be provided, so that notes can be made but at the same time the assessment will not be interrupted by waiting for the interviewer to be available etc.

As the DAWBA like the SDQ can be completed in full from any internet terminal, this provides the option that if parents or adolescents were not going to be staying at the lab assessment, then they could complete it online from home or work. It is also useful that they can start at the lab but finish later if there is pressure on their time but we do not recommend this as parents will not have opportunities to ask questions, etc. The process for completing the SDQ and DAWBA at home is the same as in the lab – they need to go to www.dawba.net, choose their language, enter their ID and password, and then follow the instructions. In case of a home assessment, the research assistants will make sure they receive a print of their ID codes and passwords.

The adolescent/ the parent will then follow the instructions on the screen. The “scroll backwards” option provided by the internet browser allows to review pages and to change entries. As soon as the user clicks the “>>>” button, the answers of this page will be saved. When the user abandons the testing he or she can continue at any time from the point that they left off.

DAWBA coding:

The DAWBA ID numbers are simply 5 digit numbers. The ID is simply auto-numbered and the password is an 8-digit random number. It is part of the security on the DAWBA site that no information in the ID or password is conveyed. So it is not possible for anyone to guess identity from ID or password.

Workpackage 7 provides a procedure to reliably link the various data collected per family (i.e. Psytools, DAWBA, CANTAB, MRI) and therefore provides each site with the DAWBA and other codes needed. Nevertheless, each site will be responsible for recording which DAWBA ID they give to which participant, so the link between personal information and the anonymised codes will be stored only locally. This information will be entered into the “recruitment data base.xls”-file and maintained on the site database as described above. This information will then be used for the institute assessment as it will be written in the CRF as well as on the ID cards for the child and the parent.

The DAWBA website also offers each study site a team data base function that enables the team to edit DAWBA functions, i.e. review of interview results or creating new interview slots. Please refer to <http://www.dawba.net/py/user/help/text.py?h=teamintro> for guidelines.

Apart from those interview slots that might be needed for pilot assessments, no slots have to be created for the participants of the main study by the teams at the study sites as Workpackage 7 provides coding lists including DAWBA codes.

Data review:

In order to be able to review the results of the DAWBA assessment at the end of the data-collection session in case the families have any questions (or to make sure that the young person is not at significant psychiatric risk), each IMAGEN group will be considered a separate DAWBA team with its own name (IMAGEN London, IMAGEN Paris, etc.).

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After logging in as a team, the researcher will be provided with a pdf-document giving an overview over possible (but not confirmed) diagnoses. These can be used as a basis for a feedback for the parents and children telling about areas of noticeable psychological strain provided that both adolescent and parent agree to having a feedback. The feedback session should be carried out by a clinician and should offer information about possible support.

Diagnostic rating:

There will also be additional passwords and instructions for raters and team administrators, but these will be provided closer to the actual rating sessions which will be held regularly. For the diagnostic rating of the answers, trained raters will need the same log in information as described for the data review to get access to the data.

In order to see the reports and do the rating online please refer to

<http://www.dawba.net/py/user/help/text.py?h=raterintro> for guidelines. The London site will provide Team IDs and team passwords.

Time-Line-Follow-Back procedure

For the TLFB, the researcher will fill in a diary with the adolescent to document the amount of drug, cigarette and alcohol consumption as well as medication intake in the past 30 days not including today. It also asks for the amount spent on drug, cigarettes and alcohol in case the child bought it. Additionally, today's drug, alcohol, cigarette and medication use will be registered as a control for MRI and neuropsychological testing – this will be documented separately in the CRF.

Before the interview starts, the interviewer must first remind the child about confidentiality. Instructions can be found in the TLFB interview sheets.

To facilitate the recall, the researcher explains the diary sheet to the adolescent. The interviewer starts with marking TODAY in the calendar sheet and then fills in all calendar dates starting with YESTERDAY as day 1 and counting back 30 days.

The interviewer must ask the child to recall as many potentially relevant events that has happened during the past 30 days (e.g. bank holidays, regular courses etc.). Interviewers document them in the calendar and then proceed to going back, starting with "Yesterday", asking and documenting day by day the amount of drug/alcohol/cigarettes consumed as well as costs in case the child bought the drug themselves on each day.

At a later point in time, the results of the TLFB interview regarding the past 30 days not including today will be summed up and filled into the boxes in the last section of the TLFB sheets (see also CRF). For calculating the number of Standard Drinks Units, an excel sheet is provided including a formula containing the two variables volume percentage of alcohol and the volume per drink. These data will then be entered into Psytools by the researcher.

Also, TODAY's medication and substance use will be documented in the CRF and entered into the main data base at the time the local data will be transferred (see SOP of Workpackage 7 for more details).

MRI Screening

As a standard procedure, every female person being scanned in the MRI is routinely for potential pregnancy on the day of scanning to avoid any potential damage to the unborn child and about presence of non-removable piercings and tattoos by filling in a standard form. For 14-year old adolescents, accompanied by a parent, we have concerns about the reliability of self report when asked in the presence of the parent. Therefore, we will ask the relevant questions additionally in a confidential face-to-face interview with the child prior to each MRI assessment. The questions are listed (attached) at the beginning of the Time-Line-Follow-Back-Interview which is also a confidential face-to-face interview.

In case an actual pregnancy is revealed, the family will be excluded from the study. In case the parent does not know about the pregnancy of their child, the child will be encouraged to let her parent know about it. In case a pregnancy

may be present but is doubtful, a urine-based pregnancy test will be offered in confidential surroundings. If the child does not want to administer the test or the test is positive, the family will be excluded from the study. If the child does not want their parents to know about her actual or potential pregnancy, the parent will be informed that some exclusion criteria applied but not which. If the test is positive, we will recommend to repeating the test later on in terms of reliability and offer ongoing support for the child to communicate with her parents or to get support by local community services.

Family History interview procedure

For the Family History, the interviewer follows the instructions on the Psytools programme. The interviewer is recommended to give the following information to introduce the instrument to the parent: "The following questions concern information about your family. This information includes the country of origin and ethnicity of yourself and the grandparents of your child, as well as mental health of relatives such as brothers or sisters, grandparents or aunts and uncles of your child."

If a parent asks for the reason why these data are collected, the interviewer can refer to the blood sample taken from the child and explain: "It has long been known that inheritance plays an important role in the maintenance of psychological well-being as well as various environmental factors. It is for this reason that we ask about family history. By this we mean the incidence of a psychological illness within a family. Familial load varying between families gives helpful hints on the potential influence of genetic factors on mental health. Furthermore, genetic characteristics vary between people of different backgrounds, as can be recognised easily by skin colour etc. We require information about the ethnic background of your family so that any genetic differences which may be traced back to the respective individuals are not incorrectly attributed."

The interviewer has to use two coding lists to enter ethnicity in Psytools: The ethnicity coding key and the country of origin coding key (see Appendix). The items for the psychiatric family history are provided on the Psytools screen.

If a parent does not know about the questions asked, there is an option to report this in the programme. If a parent for example knows that there was some psychiatric problem with one of the relatives but does not know the correct diagnose, the interviewer should tick the relative's box (e.g. "aunt [maternal]"), for diagnose tick "other" and for the certainty of the diagnose either tick "doubtful" if it is not sure whether the aunt suffered from a psychiatric disease or "sure" if the parent is sure but just does not know the name of the diagnose. The interviewer can help the parent recalling the name of the diagnosis by asking for symptoms and suggesting names of diseases to facilitate recall. Nevertheless, due to time limitations, the interviewer is not meant to thoroughly screen for psychiatric diseases and should not go through full DSM or ICD criteria for each family member.

As only one disorder can be entered per relative, the following rule applies in case of multiple disorders per relative:

1. For mother and father, multiple entries will be analysed as referring all to the mother/ father (as there can only be one biological mother/ father).
2. For other relatives, only the primary diagnosis is to be entered. Multiple entries for one relationship will be analysed as to belonging to different relatives (e.g. brother 1 and brother 2). If the researcher finds it difficult to decide on a primary diagnosis in the presence of multiple disorders, one diagnosis will be entered into Psytools and the others will be written down in the comment section in the CRF which will be entered into the NNL software during data transfer.

CTS instructions

The CTS will be assessed as a computerized questionnaire with Psytools, nevertheless it asks about very sensitive information, i.e. domestic violence. Therefore, the researcher has to reinforce the confidential nature of the data handling. In case a parent does not want to give any answer, allow them to refrain from completing the questionnaire.

If a parent becomes distressed while answering the questions or indicates that abuse is occurring in the home, ask about their distress and if they have disclosed to anyone about the current violence. Ask if they would want the researcher to share this information with their clinical supervisor, and then bring the information to the clinical supervisor. Researchers will not be expected to conduct a risk assessment, but clinical supervisors will if the participant is in agreement. We generally will take a non-interventionist approach to assessment, so we should only

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intervene if the participant indicates clearly that they or the child are in imminent danger, or if they specifically request assistance.

In any case, the researcher should allow participants a moment to a pause and recover from this questionnaire. They should be asked if they are ok and comfortable continuing.

Every site has to make sure that the research team adheres to the national law regarding a potential obligation to report domestic partner violence to an official site.

Contact details for follow-up assessment

In order to increase the probability of getting in contact with the families after about 2 years time despite potential moves or changes in email addresses etc., families will be asked to provide a) their landline telephone number and b) two additional contact details of stable family members like grandparents or other stable persons. These will be noted in the respective tables provided in the CRF.

Participant's compensation

After all assessments have been completed, vouchers or other site specific incentives as described above will be handed over to the adolescent or (like in France) to the parent.

Data and code handling

Every Study site is provided with a code list linking PSYTOOLS, DAWBA and the PSC codes for every subject. Once a family is included in the sample, these codes are assigned to that family. All files containing either personal information about individuals or codes have to be handled with special care, which means:

* Limited access:

1. Only a limited number of staff (preferably one with main responsibility and somebody acting as a back-up) has access to the files.
2. The files are password locked or the folders they are stored in are only accessible via password. The passwords are only known to staff mentioned above.

* Back-up:

Every site is responsible for a secure storage in terms of providing back-ups. These back-ups also have to meet the criteria for limited access.

For the institute assessment, two versions of ID code documents are provided on the milliarium website:

a) IMAGEN_ID_card-labels_codes-for-child+parent:

This document provides two A5 labels, one for the child and one for the parent, both contain the DAWBA group code and the Barcode as well as a box for the stickers and space for initials, but no passwords. This version only is to be used for the families.

b) IMAGEN_ID_codes-for-institute:

This document contains all codes and password and is only to be inserted in the CRF and not shown to the participants. This version is to help the research assistants setting up the codes for the assessment.

To avoid copy and paste errors between the code list and recruitment and assessment documents, all sites are advised to use the function "mail merge" ("Serienbrief") of Windows Word.

It is recommended to use this function to create documents including

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- the ID card for parent and child
- the ID codes for the research assistants
- and the home assessment download information letters.

This function allows you to automatically insert fields of an excel table in a word document, one printout of the document contains then all previously defined cells of one row of the table.

5 Procedure for Checking Psytools Data Files

Every research site will be able to check their results of the home assessment like missing tasks and invalid data (e.g. extreme rating patterns, inconsistent ID information) in a summary sheet provided online by Delosis.

In case reliability is doubtful, children will be called and asked for more details about the testing situation. If reliability remains doubtful and the assessment cannot be repeated either at home or at the research centre, an exclusion from the study has to be considered.

The following section provides a guide for Psytools data monitoring:

Before you begin

You must install our ssl certificate before accessing the site: www.delosis.com/delosisCA.cer

Just download and run this file then click the install button - it may ask you to confirm the thumbprint - this is: 73 f9 f8 5a 01 4f f6 82 cf 89 de 44 fd 04 41 dd 83 cc 0a d5

Depending on your operating system settings the thumbprint of the certificate will be displayed to check no one has tampered with it. If you see a different thumbprint displayed when installing our certificate please contact support@delosis.com.

Login

Enter the following URL into your web-browser: <https://psytools.delosis.com/psytools-server/>

When prompted enter your username and password.

Using the application

After login you will see a list of all the users in your sample – in other words all the user logins which are available at your site. This list is paginated and the page controls are at the top and bottom of the list on the right hand side.

For each Family there are three logins one for the child, one for the parent and one for use only at the imaging centre (Institute). Each User Code consists of the PSC followed by a C, P, or I.

The Tasks Column at the right hand side of the user list gives you an immediate view of the progress of that user. It shows the number of tasks Attempted / Total Assigned (Number Fully Completed).

Clicking on the User Code allows you to see the status of each task the user has been assigned. Here you can see the number of times each task has been attempted and completed. The date column shows when the most recent attempt happened.

Clicking on the View link will take you to a list of each attempt on that specific task. Here you will see when it occurred and whether or not it was completed.

You can use the “back to ...” links at the top and bottom of the screen to return to the previous view or click on the “User” tab to return directly to the user list.

Standard Procedure for Validation Check for Home Assessment with Psytools

1. Please **check the completion and validity** of the home assessment with Psytools before you give the final incentive.
2. With checking the completion, in order **to check the validity, please click on "View" for every single task**. A window will open which will only display this task and the validation check. If the validation check failed, a yellow marked comment (=validation flag) will be shown.
3. **If a validation flag is shown, the London site will check the reason for this**. Please send the last 6 digits of the subject's barcode and the respective task name that is flagged.
4. The London site will then check the data **and feed you back, which flag type was shown** (see below).
5. **Please do the following** for the various flags:

In general:

Tell the child that an automatic system highlighted some of their answers and this is why we get back to them to clarify these flags.

1. "Subject indicates, they are in a hurry"

Please ask the child if they took their time to do the task. If this is doubtful, please ask them to redo the task.

2. "Another person is watching"

Please ask the subject if they responded to the feedback to answer the following questions on their own/ if a confidential context was given. If not so, ask them to redo the task.

3. "Distracting noise" or 4. "Listening to music"

Please ask them if they could switch off the noise or switched off the music before they run the task. If not so, please ask them to do the task again.

4. "All responses being the same" or 6. "Mean reaction time <100"

Please ask them if they were in a hurry or understood the task well and offer help. Then ask them to do the task again.

5. "Drug relevin indicated as known or taken"

Please let the child know that this drug is quite unusual and hard to get and let the kid describe you in which context they might have heard its name or how they got hold of it. The reliability rating then depends on the child's explanation. When reliability is doubtful, it is not recommended doing the task again but just entering a comment on the Nordic Ice software.

6. **Please note the results of the validation check and the potential repetition in the reliability table in the CRF.**

General recommendation:

→ Please let the London site know as soon as possible about validity check failures as subjects should redo the doubtful tasks before they finish with the whole assessment and receive their incentives.

6 Procedure for sending data to the main IMAGEN data base

The reliability of all data including both, home and institute assessment, has to be checked before sending the data to the main data base in France.

Psytools home assessment files will be checked for completion and reliability before the institute assessment and repeated if necessary to guarantee sufficient reliability.

Data assessed at the research centre will be checked for completion and reliability by the supervising researcher and data status and quality will be documented, as well as additional variables that will later be entered to the main data base. For documentation we provide a Case Report Form (CRF) online. This CRF can be used as a guideline for the whole assessment procedure for one family and includes protocols for each tasks as well as additional variables checking for medication and drug use (type, amount, time of last intake) on the day of the institute assessment, the age and relationship of the parent joining the adolescent, and the data status and quality for every task (see Table 5).

These variables will then be entered into the software nordicICE installed on the Locale Data Centre (LDC) when uploading all data files for one family in order to prepare the final data push to the main data base in France.

For further information, please refer to the SOP of WP7 (Jean-Baptiste Poline).

Table 5: Data Entry in Main Data Base – Data status and quality

Completed today			Not completed today			
Reliable quality	Doubtful reliability	Not reliable	To be completed		Not to be completed	
			at home	next visit	missing	completed before

7 Procedure for Managing Families with Adolescent Participants

To ensure family participation, it is necessary for the families to understand what their child can personally gain from taking part in this experiment. Extra-curricular activities including voluntary experience and work are now fully encouraged by schools and institutes of higher education. As such, families and the adolescents themselves will hopefully feel more willing to take part in the study should they see this as a voluntary experience, which they could aid them advance in their academic career.

On the day of testing it is vital that the adolescents feel comfortable taking part in the experiment and give natural and unbiased answers. It is therefore helpful to engage the adolescent in informal conversation before the start of the testing. Topics which can immediately be drawn upon include the year of school that they are in and the level of education that they are dealing with at the time (for example the start of the GCSE year). Empathising with the adolescent from personal experiences will allow the adolescent participant to feel at ease in your company and comfortable asking questions. It is always useful to offer the participant something to eat or drink. As well as making them feel more comfortable, this also gives them something to do should there be any waiting time before and in-between testing sessions.

MRC guidelines for research involving children states that "legally competent children are entitled to expect that information about themselves will not be provided to a third party, including their parent/guardian" (MRC, 2004, p.34) In this study, participants will be under 16 years of age, which does not entitle them to this confidentiality under the law. However, in order to ensure reliability of self-report information, parents will consent to not having access to their child's information. Assessments of adolescents will be conducted using a computerised tool and parents will be instructed to allow youth privacy to complete assessments. Questionnaires involving more sensitive material will be administered at the research site prior to scanning. Information revealed to us will remain confidential from the other members of their family. Consent forms will clearly state the conditions under which we must report confidential information to parents or local authorities. Under all circumstances in which disclosure to parents is indicated, researchers should first let the child know that this will occur and the reasons for the disclosure.

Adverse Effects:

With regard to possible adverse effects of specific parts of the project e.g. self reports, interviews, on recent subjects, all sites will offer the possibility for adequate counselling by trained child and adolescent psychiatrists/psychologists.

Adventitious Findings:

Any adventitious findings obtained during clinical/psychological characterisation and/or imaging with a potential impact on the health status of a participant will be communicated to the parents and child. Adventitious findings may include:

- a) irregularities in imaging which require clarification (no responsibility is taken for false negative results).
- b) irregularities in psychological assessment which require clarification, treatment or intervention, e.g. depression, suicidality, history of either being a victim or having carried out acts of aggression.

Adventitious findings from genetic analyses will not be disclosed to participants due to the anonymous nature of this information. This will be conveyed to the parents and child in the information sheet prior to participation in the study.

Consent from parent and child being informed about adventitious results will be necessary before a child can be included in the study.

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9 Appendices

9.1 Appendix I: Instruction letter – Psytools Guide for home assessment



University of London



EU Research Project IMAGEN on personality and risk taking in adolescents

Thank you for agreeing to support the European research project IMAGEN on personality and risk taking in teenagers!

We have created some computer tasks that we would like you to complete on your own. The tasks are fun, but can also be challenging!

To take part in this study you will first need to have a computer with Internet connection. If you don't, but you would still like to take part, please contact us on 020 7848 0824 (Dr. Maren Struve) and we will see what we can arrange. You will need to install the software from the **IMAGEN homepage** at

<http://www.imagen-europe.com/study-english>

This won't take very long and please be assured that this is perfectly safe for your computer! Please read the "Getting Started" guide on the next pages for information on running the installation and the tasks.

During installation you will be asked to enter a Player Code and Key. Every time you login you will also have to enter your password.

Your Player Code is	«ID»
Your Player Key is	«ID»
Your Password is	«password»

You will need to use your password every time you login – please remember it!

When installing the tasks from the IMAGEN homepage the software will need to connect to the Internet for just a few seconds to communicate with our computers. There is no need to be on-line to run the tasks. The programme will send the results back to us over the Internet when you have completed the tasks, taking just a few seconds. All the information that you send over the Internet is protected by SSL encryption and will be kept **strictly confidential and anonymous**, Your personal data e.g. name and address will be kept completely separate from the results of these tasks.

You can then run the tasks when you wish **until the day before your lab assessment at our institute**.

Please answer the tasks on your own. There are 10 tasks in total, some will last between 5 and 10 minutes and a few will take 15 to 20 minutes each. You should be finished with all the tasks after a maximum of 90 minutes. You can take breaks between tasks, or even run them on different days if it is easier.

If you have any problems with installing the programme or any questions about the study, please do not hesitate to call us on 020 7848 0824.

**Thank you so much for the time you have given to IMAGEN –
Your help makes our research possible!**

Getting Started with the internet download

■ STEP 1: Installing the Program

Open your internet browser and open the link

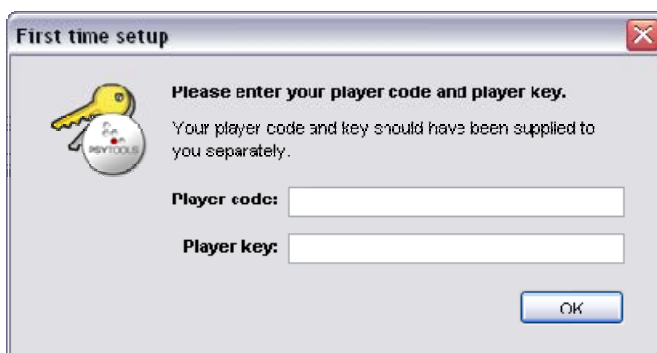
<http://www.imagen-europe.com/study-english>

at the IMAGEN homepage. Then double click on the download-button of the appropriate software version (upper one for Microsoft Windows, lower one for Mac OS X) and follow through the Installation Process.

The screenshot shows the 'Imagen Study' page. The main content area contains instructions for downloading the installer for both Microsoft Windows and Mac OS X. Two red starburst graphics highlight the 'Download' buttons for each operating system. The Windows section includes instructions to click the button, save the file to the desktop, and double-click to install. The Mac OS X section includes instructions to click the button and double-click the downloaded disk image if installation does not begin automatically. The right sidebar lists system requirements for both Windows (98/SE, ME, NT4, Pentium class processor, 64MB RAM, Java 1.3) and Macintosh (OS X 10.1 or later, 64MB RAM, Java 1.4).

At the end of the installation, allow the programme (Psytools) to run automatically.

Enter the Player Code «ID» and Player Key «ID» here:

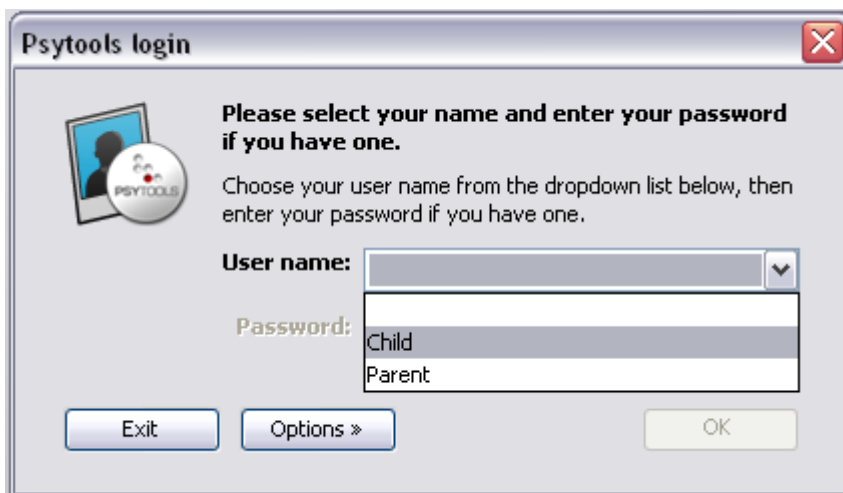


Depending on your firewall software it might prompt you the first time that you run the software. Depending on the software it will say something like "Psytools (or possibly Java) is trying to access the internet. Do you want to let it do so?" If this happens, then please allow Psytools to access the internet.

Psytools has to connect to the Internet the first time it is run to allow it to communicate with our computers at the Research Centre. This process will take just a few seconds, and then you can do all of the tasks without tying up your telephone line!

🔒 STEP 2: Logging In

Select "Child" from the user list:



Then and enter your private password «password» below, finally press 'OK':



🏆 STEP 3: Play the Games!

Press the “Download” button on the right side for every task. This button then changes to a “Play” button – just press it to start.



When a task is completed, the button changes to “Send Results”. Clicking this button will connect you to the Internet and the results will automatically be sent.

If you don’t want to connect now, Psytools will try to send the results back when you exit the program, this will take only a few seconds.

If you are not ready to play the games you can simply exit out. To restart the program later, double-click on the Psytools icon on your desktop, or on your start menu.



Please take note:

- ❖ After you have completed the tasks, and the results have been sent, you will be able to run them again if you wish.
- ❖ If you have any concerns, comments, or technical problems at all please telephone us on 020 7848 0824 or email at maren.struve@iop.kcl.ac.uk

Many thanks from the IMAGEN team!

9.2 Appendix II: Screening – Exclusion Criteria, London version



Institute of Psychiatry
Section of Addiction Research
Division of Psychological Medicine
Box 048
Addiction Sciences Building
4 Windsor Walk, Denmark Hill
London SE5 8BB

TEL: 020 7 848 0824

FAX: 020 77018454

maren.struve@iop.kcl.ac.uk

patricia.conrod@iop.kcl.ac.uk

IMAGEN - Parents Questionnaire

Thank you very much for supporting the IMAGEN project on risk taking behaviour in children!

We would like you to answer some short questions about your child's and your condition as these are certain conditions that might require us to exclude your child from participating in the study.

Of course, all data will be kept strictly confidential!

Answering all questions might take about 5 minutes.

How to answer the questionnaire:

- If you do not know the answers to the question below, please tick the box "*not known*".
- If you choose not to answer a particular question for whatever reason, please tick the box "*not available*" and add a short note if you like.
- If you encounter difficulties understanding the questions, please let us now! Please feel free to add a note or call us (see contact details in the header)!
- Please use BLOCK CAPITAL LETTERS for filling in text!

THANK YOU VERY MUCH!

PLEASE ANSWER THE FOLLOWING QUESTIONS

(please turn to next page)

Personal Data	
The child is (please tick) <input type="checkbox"/> female ... <input type="checkbox"/> male
How old is your child?	<input type="text"/> <input type="text"/> years
Please tell us the exact date of birth :	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

Pregnancy and Birth	
Was the child exposed to alcohol use of the mother during pregnancy <u>and</u> was it more than 210 ml of alcohol per week ? [e.g. more than 14 bottles of beer or 9 glasses of wine or 7 glasses of hard liquor]	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
Was the child exposed to Diabetes of the mother during pregnancy with the onset of Diabetes before pregnancy including a treatment by insulin?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
Was it a premature birth (< 35 weeks) and/ or a detached placenta ?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
Was the child suffering from jaundice (Hyperbilirubinemia) requiring transfusion ?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available

Child's Medical History	
Does the child suffer from ...	
... type I diabetes , also known as "childhood," "juvenile," or "insulin-dependent" diabetes?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
... systemic rheumatologic disorders , e.g. complications of strep throat, such as inflammation of kidneys (glomerulonephritis) or heart inflammation (endocarditis)?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
... malignant tumours requiring chemotherapy (e.g. leukaemia)?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
... heart defects or experienced heart surgery?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
... aneurism , i.e. a localized, blood-filled dilation (bulge) of a blood vessel?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available

Child's Mental Health & Abilities	
Does the child undergo a treatment for schizophrenia or bipolar disorder ?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
Does your child's IQ is lower than 70 ?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available

Child's Neurological Condition	
Does the child suffer from ...	
... epilepsy?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
... bacterial infection of the central nervous system/ the brain?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
... brain tumour?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
... head trauma with loss of consciousness for more than 30 minutes?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
... wasting of the muscles (muscular dystrophy or myotonic dystrophy)?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available

Child's Developmental Conditions	
Does the child suffer from ...	
... nutritional and metabolic diseases , e.g. failure to thrive or enzyme deficiency (phenylketonuria)?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
... major neuro-developmental disorder (e.g. autism)?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available

Does the child suffer from ...	
... hearing deficit requiring hearing aid?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
... vision problems like strabismus or non correctible visual deficits?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available

Contraindications for Magnetic Resonance Imaging	
Does your child wear any metal implants , e.g. braces or stents (other than fixed prosthodontics like crowns) or had any operations where metal has been inserted into the body?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
Does your child wear electronic, magnetic or mechanic implants or devices , e.g. pacemakers or ear implants, or does your child wear non-removable piercings ?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
Does your child have any foreign metallic bodies in the eyes or does your child have any shrapnel in the body ?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
Does your child have any tattoos at the upper part of the body?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
Does your child have a false limb ?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available
Does your child suffer from severe claustrophobia , i.e. does he or she fear enclosed or confined spaces?	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown <input type="checkbox"/> not available

Thank you very much for your answers!

9.3 Appendix III: IMAGEN – Family History: Coding Key PLACE OF BIRTH (English version)

AD	Andorra	DE	Germany	JO	Jordan
AE	United Arab Emirates	DJ	Djibouti	JP	Japan
AF	Afghanistan	DK	Denmark	KE	Kenya
AG	Antigua and Barbuda	DM	Dominica	KG	Kyrgyzstan
AI	Anguilla	DO	Dominican Republic	KH	Cambodia
AL	Albania	DZ	Algeria	KI	Kiribati
AM	Armenia	EC	Ecuador	KM	Comoros
AN	Netherlands Antilles	EE	Estonia	KN	Saint Kitts and Nevis
AO	Angola	EG	Egypt	KP	Korea, Dem. P. Rep.
AQ	Antarctica	EH	Western Sahara	KR	Korea, Republic of
AR	Argentina	ER	Eritrea	KW	Kuwait
AS	American Samoa	ES	Spain	KY	Cayman Islands
AT	Austria	ET	Ethiopia	KZ	Kazakhstan
AU	Australia	FI	Finland	LA	Lao P. Dem. Rep.
AW	Aruba	FJ	Fiji	LB	Lebanon
AZ	Azerbaijan	FK	Falkland Isl. (Malvinas)	LC	Saint Lucia
BA	Bosnia + Herzegovina	FM	Micronesia, Fed. States	LI	Liechtenstein
BB	Barbados	FO	Faroe Islands	LK	Sri Lanka
BD	Bangladesh	FR	France	LR	Liberia
BE	Belgium	GA	Gabon	LS	Lesotho
BF	Burkina Faso	GB	United Kingdom	LT	Lithuania
BG	Bulgaria	GD	Grenada	LU	Luxembourg
BH	Bahrain	GE	Georgia	LV	Latvia
BI	Burundi	GF	French Guiana	LY	Libyan Arab Jamahiriya
BJ	Benin	GH	Ghana	MA	Morocco
BM	Bermuda	GI	Gibraltar	MC	Monaco
BN	Brunei Darussalam	GL	Greenland	MD	Moldova, Republic of
BO	Bolivia	GM	Gambia	ME	Montenegro
BR	Brazil	GN	Guinea	MG	Madagascar
BS	Bahamas	GP	Guadeloupe	MH	Marshall Islands
BT	Bhutan	GQ	Equatorial Guinea	MK	Macedonia, f. Y. Rep.
BV	Bouvet Island	GR	Greece	ML	Mali
BW	Botswana	GS	S. Georgia + Sandw. Is.	MM	Myanmar
BY	Belarus	GT	Guatemala	MN	Mongolia
BZ	Belize	GU	Guam	MO	Macao
CA	Canada	GW	Guinea-Bissau	MP	Northern Mariana Isls.
CC	Cocos (Keeling) Islands	GY	Guyana	MQ	Martinique
CD	Congo, Dem. Republic	HK	Hong Kong	MR	Mauritania
CF	Central African Republic	HM	Heard + McDonald Isls.	MS	Montserrat
CG	Congo	HN	Honduras	MT	Malta
CH	Switzerland	HR	Croatia	MU	Mauritius
CI	Côte d'Ivoire	HT	Haiti	MV	Maldives
CK	Cook Islands	HU	Hungary	MW	Malawi
CL	Chile	ID	Indonesia	MX	Mexico
CM	Cameroon	IE	Ireland	MY	Malaysia
CN	China	IL	Israel	MZ	Mozambique
CO	Colombia	IN	India	NA	Namibia
CR	Costa Rica	IO	Brit. Ind. Ocean Territ.	NC	New Caledonia
CU	Cuba	IQ	Iraq	NE	Niger
CV	Cape Verde	IR	Iran, Islamic Republic of	NF	Norfolk Island
CX	Christmas Island	IS	Iceland	NG	Nigeria
CY	Cyprus	IT	Italy	NI	Nicaragua
CZ	Czech Republic	JM	Jamaica	NL	Netherlands

SOP - Appendices

NO	Norway	TK	Tokelau		
NP	Nepal	TL	Timor-Leste		
NR	Nauru	TM	Turkmenistan		
NU	Niue	TN	Tunisia		
NZ	New Zealand	TO	Tonga		
OM	Oman	TR	Turkey		
PA	Panama	TT	Trinidad and Tobago		
PE	Peru	TV	Tuvalu		
PF	French Polynesia	TW	Taiwan, Prov. of China		
PG	Papua New Guinea	TZ	Tanzania, United Rep.		
PH	Philippines	UA	Ukraine		
PK	Pakistan	UG	Uganda		
PL	Poland	US	United States		
PM	Saint Pierre + Miquelon	UY	Uruguay		
PN	Pitcairn	UZ	Uzbekistan		
PR	Puerto Rico	VA	Vatican City State		
PS	Palestinian Terr., Occ.	VC	St. Vincent + Grenad.		
PT	Portugal	VE	Venezuela		
PW	Palau	VG	Virgin Islands, British		
PY	Paraguay	VI	Virgin Islands, U.S.		
QA	Qatar	VN	Viet Nam		
RE	Réunion	VU	Vanuatu		
RO	Romania	WF	Wallis and Futuna		
RS	Serbia	WS	Samoa		
RU	Russian Federation	YE	Yemen		
RW	Rwanda	YT	Mayotte		
SA	Saudi Arabia	ZA	South Africa		
SB	Solomon Islands	ZM	Zambia		
SC	Seychelles	ZW	Zimbabwe		
SD	Sudan				
SE	Sweden	XX	Not Known		
SG	Singapore				
SH	Saint Helena				
SI	Slovenia				
SJ	Svalbard + Jan Mayen				
SK	Slovakia				
SL	Sierra Leone				
SM	San Marino				
SN	Senegal				
SO	Somalia				
SR	Suriname				
ST	Sao Tome and Principe				
SV	El Salvador				
SY	Syrian Arab Republic				
SZ	Swaziland				
TC	Turks + Caicos Islands				
TD	Chad				
TF	French S. Territories				
TG	Togo				
TH	Thailand				
TJ	Tajikistan				

9.4 Appendix IV: IMAGEN – Family History: Coding Key Ethnicity (English version)

GB	White: British
IE	White: Irish
FR	White: French
DE	White: German
TR	White: Turkish
GR	White: Greek
IT	White: Italian
PL	White: Polish
RU	White: Russian
ES	White: Spanish
NL	White: Dutch
PT	White: Portuguese
EU	White: Other - European
NA	White: Other - North American
AU	White: Other - Australian
AP	Asian: Pakistani
AI	Asian: Indian
AB	Asian: Bangladeshi
AK	Asian: Korean
AV	Asian: Vietnamese
AC	Asian: Chinese
AJ	Asian: Japanese
BC	Black or Black British: Black Caribbean
BA	Black or Black British: Black African
AR	North African: Arabic
EG	North African: Egyptian
MA	North African: Maghreb
OE	Other - European
OF	Other - African
ON	Other - North American
OM	Other - Middle American
OS	Other - South American
OA	Other - Asian
OU	Other - Australian
WC	Mixed: White and Black Caribbean
WF	Mixed: White and Black African
WA	Mixed: White and Asian
OX	Other - Mixed
XX	Not Known

9.5 Appendix V: Time Line Follow Back Instructions including MRI screening and Diary Sheets

TIME LINE FOLLOW BACK INTERVIEW – IMAGEN Study

Screening for MRI

Introduction: “Today we want you to take part in a brain scanning session and we have to make sure that you will not be harmed in case you meet any of the exclusion criteria. It is not always easy for some children do tell us about it in the presence of their parents. This is why I want to ask you now again. Be reassured that everything you tell us will be kept strictly confidential. We will only tell your parents in case you want us to do so.”

1. Do you have any **removable or non-removable piercings**? yes no

→ If removable piercings – remove! removed

→ If non-removable piercings – exclude from study.

2. Do you have any **tattoos**? yes no

→ If yes: Are the tatoos on the upper part of the body/ close to the head/ on the head?

yes no

→ If there are any tattoos, check with radiographer, if necessary exclude from study. Exclude because of tattoos? yes no

3. Have you taken any alcohol, **have you smoked or used any drugs or have you taken any medication** in the past 30 days including today? yes no

→ If no, **only ask girls the following questions, do not go on with the TLFB.**

→ If yes, **administer the whole interview.**

For girls only:

“Before you go into the scanner, we also need to rule out the possibility of you being pregnant, so I am going to ask another couple of questions. Again, this will be kept confidential from your parents if you wish.”

- Have you been **sexually active** in the past year? yes no

→ If no, skip to TLFB.

- Are you taking the **contraceptive pill**? yes no

- Have you **begun to menstruate**? yes no

→ if no period yet – skip to TLFB

- If yes, when was the **first day of your last cycle**? days ago

→ if less than 28 days ago then unlikely to be pregnant – skip to TLFB

- Is there any chance you might be **pregnant**? no yes doubtful

→ If **doubtful**, offer to **administer pregnancy test** in confidential surroundings esp. regarding parent or guardian. - If girl does **not want to administer the test**, exclude the person from the study

- Pregnancy test administered: yes no

- Test result: positive negative

→ In case of **pregnancy/ positive pregnancy test**, exclude from study

Note to interviewer: after this section of questions: ask the girl if it is ok to continue with task.

Refer to SOP-WP4 on how to communicate a positive pregnancy test result to the girl and how to approach the parent. Please write notes in this protocol about what was decided and done.

For girls only:

- Have you been **sexually active** in the past year? yes no

→ If no, skip to TLFB.

- Are you taking the **contraceptive pill**? yes no

- Have you **begun to menstruate**? yes no

→ if no period yet – skip to TLFB

- If yes, when was the **first day of your last cycle**? days ago

→ if less than 28 days ago then unlikely to be pregnant – skip to TLFB

- Is there any chance you might be **pregnant**? no yes doubtful

→ If **doubtful**, offer to **administer pregnancy test** in confidential surroundings esp. regarding parent or guardian. - If girl does **not want to administer the test**, exclude the person from the study

- Pregnancy test administered: yes no

- Test result: positive negative

→ In case of **pregnancy/ positive pregnancy test**, exclude from study

Refer to **SOP-WP4** on how to communicate a positive pregnancy test result to the girl

and how to approach the parent.

Please write notes in this protocol about what was decided and done.

Instructions for the Timeline Alcohol and Drug Use Calendar

For the interviewer: Read the following instructions to the child

To help us evaluate your drinking, smoking and drug use as well as your intake of medication, we need to get an idea of what your alcohol, cigarette and drug use and intake of medication was like in the **past 30 days. Day 1 will be the day before the testing session, then count back 30 days.** Furthermore, we are especially interested in your drinking, smoking and drug use as well as your intake of medication **today.**

To do this, we would like you to help us fill in the attached calendar.

- ✓ Filling in the calendar is not hard!
- ✓ Try to be as accurate as possible.
- ✓ We recognize you won't have perfect recall. That's OKAY.

WHAT TO FILL IN

- The idea is to put a number in for **each day** on the calendar.
- On days when you did not drink, smoke, use a drug or take medication, we will write a "0".
- On days when you did drink, smoke, use a drug or take medication, we will write in the kind of drug you took and the total number of drinks or cigarettes you had or the amount of drug you took (in grams, or puffs, pills, drops etc.).
- *For example*, if you had 6 cans of beer, we will write this in the calendar. If you drank two or more different kinds of alcoholic beverage in a day such as 2 beers and 3 glasses of wine, we would write the number 5 for that day.
- Furthermore, we are interested in how much money you might have spent on the alcohol, cigarettes and drugs. So if you have bought any drugs or alcohol, please tell us the amount of money you spent.

(For interviewer: It's important that something is written for every day, even if it is a "0")

YOUR BEST ESTIMATE

- We realize it isn't easy to recall things with 100% accuracy.
- If you are not sure whether you drank 7 or 11 drinks or whether you drank on a Thursday or a Friday, **give it your best guess!**
- What is important is that 7 or 11 drinks is very different from 1 or 2 drinks or 25 drinks (or that £3 is very different from £30). The goal is to get a sense of how frequently you drank, how much you drank, and your patterns of drinking, and to get a sense for the same for your drug use and smoking.

HELPFUL HINTS

We are going to start the interview off me asking about the events in the past month to help you remember better.

- If you have an **appointment book** you can use it to help you recall what you were doing over the past few weeks and whether those events included drinking, smoking, or drug/ medication use.
- If you have a **mobile phone**, you can also look up which text messages you have received during the past 30 days to help you recall the events or appointments you have had in the past 30 days.
- We will mark **holidays** on the calendar to help you better recall your drinking, smoking, and drug use. Also, think about how much you consumed on personal holidays & events such as birthdays, vacations, or parties.
- If you have **regular drinking or drug taking patterns** you can use these to help you recall your drinking and drug use. For example, you may have a daily or weekend/weekday pattern, or drink more in the summer or on trips, or you may drink on Wednesdays after playing sports.

COMPLETING THE CALENDAR

- A blank calendar is attached.
- In the calendar sheet, we will start writing TODAY in the last row “This Week” in the appropriate weekday’s cell (for example, if today is a Monday, we will write TODAY in the first cell of the last row).
- Next, we will add helpful hints in the calendar as described above.
- Then we will write in the type and number and kind of drinks, cigarettes, and drugs/medication that you had each day and (if applicable) the amount of money you have spent on it.
- The time period we are talking about on the calendar is the **last 30 days**.
- In estimating your drinking and drug use, be as accurate as possible.
- Before we start we will have a look at the **SAMPLE CALENDAR**.

(For interviewer: Please check that all days are filled in!)

SAMPLE CALENDAR

	MON	TUES	WED	THURS	FRI	SAT	SUN
				6 0	7 Sports 0	8 0	9 0
	10 0	11 0	12 0	13 0	11 Sports 0	12 0	13 Party with Joe 3 liquors
	14 0	15 0	16 0	17 0	18 Sports 6 cans of beer	19 0	20 0
	21 Bank holiday 1 joint	22 0	23 0	24 0	25 Sports 6 cans of beer	26 0	27 0
This Week	28 0	29 0	30 0	01 0	02 Sports 3 cans of beer	TODAY 03.10.'07	

Instructions: In each cell, i.e. for every day, we will first note the date. Then we will add the kind of alcohol or drug used, and the estimated amount. We will add 0 for no alcohol and drug consumption.

Participant ID: _____ Interviewer: _____ Date: _____

YOUR TIMELINE ALCOHOL & DRUG USE CALENDAR → Start with **"TODAY"** in the last row!

	MON	TUES	WED	THU	FRI	SAT	SUN
This Week							

Instructions for entering TLFB data in data file:

Fill in the boxes below, then enter the data into Psytools, please refer to the Standard Unit Drink Charts excel file.

Do not leave any numbers boxes blank, fill in a 0 instead. Do not forget to fill in the patient ID, your name and date of completing the form on top of every sheet (included in CRF).

Do not count in today.

Report today's substance use in the main data base.

Alcohol:

Item 1: Total # of days using alcohol in the past 30 day

Item 2: Total # of Alcohol Drink Units in past 30 days:

Item 3: Total # of days using ≥ 5 (for boys)/ ≥ 4 (for girls) Standard Drink Units

in past 30 days:

Item 4: Total cost of alcohol in past 30 days: £/€

Please tick if cost is not known

Cigarettes:

Item 5: Total # of days smoking cigs. in the past 30 days:

Item 6: Total cost of cigarettes in past 30 days: £/€

Please tick if cost is not known

Cannabis/ weed/ marijuana (grass, pot) or hashish (hash, hash oil):

Item 7: Total # of days using cannabis in the past 30 days:

Item 8: Total cost of cannabis in past 30 days: £/€

Please tick if cost is not known

Inhalants (glue, aerosols etc.):

Item 9: Total # of days using inhalants in the past 30 days:

Item 10: Total cost of inhalants in past 30 days: £/€

Please tick if cost is not known

Prescription drugs like tranquillisers/sedatives (without a doctor's prescription), e.g. benzodiazepines (valium, xanax); barbiturates, barbs or downers (amytal, seconal)

Item 11: Total # of days using p. drugs in the past 30 days:

Item 12: Total cost of p. drugs in past 30 days: £/€

Please tick if cost is not known

Amphetamines (speed), methamphetamine (crystal meth), desoxyn:

Item 13: Total # of days using amphet. in the past 30 days:

Item 14: Total cost of amphet. in past 30 days: £/€

Please tick if cost is not known

LSD:

Item 15: Total # of days using LSD in the past 30 days:

Item 16: Total cost of LSD in past 30 days: £/€

Please tick if cost is not known

Magic Mushrooms or other hallucinogens (excluding LSD):

Item 17: Total # of days using M.M. in the past 30 days:

Item 18: Total cost of M.M. in past 30 days: £/€

Please tick if cost is not known

Crack:

Item 19: Total # of days using crack in the past 30 days:

Item 20: Total cost of crack in past 30 days: £/€

Please tick if cost is not known

Cocaine/ coke:

Item 21: Total # of days using cocaine in the past 30 days:

Item 22: Total cost of cocaine in past 30 days: £/€

Please tick if cost is not known

Heroin:

Item 23: Total # of days using heroin in the past 30 days:

Item 24: Total cost of heroin in past 30 days: £/€

Please tick if cost is not known

Narcotics (e.g. opium, morphine, codeine):

Item 25: Total # of days using narc. in the past 30 days:

Item 26: Total cost of narc. in past 30 days: £/€

Please tick if cost is not known

Ecstasy (MDMA):

Item 27: Total # of days using ecstasy in the past 30 days:

Item 28: Total cost of ecstasy in past 30 days: £/€

Please tick if cost is not known

Ketamine (Ket, K) or Phencyclidine (PCP, or angel dust):

Item 29: Total # of days using ket in the past 30 days:

Item 30: Total cost of ket in past 30 days: £/€

Please tick if cost is not known

GHB or liquid ecstasy:

Item 31: Total # of days using GHB in the past 30 days:

Item 32: Total cost of GHB in past 30 days: £/€

Please tick if cost is not known

Anabolic steroids:

Item 33: Total # of days using an. ster. in the past 30 days:

Item 34: Total cost of an. ster. in past 30 days: £/€

Please tick if cost is not known

Other drugs (please specify if possible):

Item 35: Total # of days using other drugs in the past 30 days:

Item 36: Total cost of o. drugs in past 30 days: £/€

Please tick if cost is not known