



Universität  
Zürich<sup>UZH</sup>



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CENTER



## **z-proso Research Workshop**

Saturday, 27 October 2018, 9:00 – 17:15  
University of Zurich, Institute of Sociology, Room 5.31 (Level 5),  
Andreasstrasse 15, 8050 Zurich

### **PROGRAMME**

**Invited Discussant** *Dan Nagin, Carnegie Mellon University*

#### **Introduction**

- 09:00 – 09:20 Welcome address, and organizational issues for future publications  
*Manuel Eisner, University of Cambridge & University of Zurich*
- 09:20 – 09:45 Introduction round of the participants
- 09:45 – 10:00 Introduction to the z-proso wave 8 data collections and instruments  
*Denis Ribeaud, University of Zurich*

#### **Schools, Educational Success, and Social Development**

- 10:00 – 10:15 Bidirectional association between teacher-child bond and oppositional behaviour against teachers in adolescence: A longitudinal analysis from ages 11 to 15  
*Sara Valdebenito, University of Cambridge*
- 10:15 – 10:30 Promoting educational success through socio-emotional skills training  
*Giuseppe Sorrenti & Ulf Zöllitz, University of Zurich*
- 10:30 – 10:45 Victimization and educational outcomes: Can the bond with teachers make a difference?  
*Noemi Pereda & Ana Martina Greco, University of Barcelona*
- 10:45 – 11:00 Discussion

**11:00 – 11:30** *Coffee Break*

#### **Comparative Analyses of Victimization and Perpetration**

- 11:30 – 11:45 Poly-victimisation over time: subtypes, relational predictors and outcomes  
*Ingrid Obsuth, University of Edinburgh*
- 11:45 – 12:00 Childhood predictors of violent victimization at age 17: The role of early social behavioral tendencies  
*Margit Averdijk, University of Zurich*
- 12:00 – 12:15 Stability and change in bullying roles: A latent class and latent transition analysis  
*Izabela Zych & Vicente Llorent, University of Cordoba*
- 12:15 – 12:30 Discussion

**Lunch Break**

### **Development of Psychopathologies**

- 13:30 – 13:45 Does physical attractiveness matter? Gender differences in self-rated physical attractiveness and its impact on internalizing behavior and suicidal behavior across adolescence  
*Urs Hepp & Niklaus Stulz, Integrierte Psychiatrie Winterthur/Zürcher Unterland & University of Bern*
- 13:45 – 14:00 Non-suicidal self-injury among adolescents in Switzerland  
*Anne Steinhoff & Lilly Shanahan, University of Zurich*
- 14:00 – 14:15 Developmental trajectories of ADHD symptoms across childhood and adolescence in z-proso  
*Aja Murray, University of Edinburgh*
- 14:15 – 14:30 Discussion

### **Violence, Delinquency & Decision-Making**

- 14:30 – 14:45 Shared and divergent risk factors for violent extremist attitudes and interpersonal violence  
*Amy Nivette, University of Utrecht*
- 14:45 – 15:00 The reciprocal nature of the relation between exposure to risk factors, short-term mindsets and delinquency  
*Jean-Louis Van Gelder & Ivy Defoe, University of Twente*
- 15:00 – 15:15 Decision-making games in z-proso  
*Heiko Rauhut & Alexander Ehlert, University of Zurich*
- 15:15 – 15:30 Discussion

15:30 – 16:00 *Coffee Break*

### **Innovations in z-proso: The Add-on Studies**

- 16:00 – 16:15 Decades to minute - The experience sampling study within z-proso  
*Aja Murray, University of Edinburgh*
- 16:15 – 16:30 Stress and substance use in young adulthood: The z-proso hair data collection  
*Lilly Shanahan & Boris Quednow, University of Zurich*
- 16:30 – 16:45 Linking early peer victimisation and exclusion with later gene expression patterns  
*Michael Shanahan & Justin Chumbley, University of Zurich*
- 16:45 – 17:00 The impact of developmental trajectories of violence and victimization on the neurobiology of social decision-making  
*Todd Hare & Ana Cubillo, University of Zurich*
- 17:00 – 17:15 Discussion

## PRESENTATION ABSTRACTS

### SESSION 1 – SCHOOLS, EDUCATIONAL SUCCESS, AND SOCIAL DEVELOPMENT

#### **Bidirectional association between teacher-child bond and oppositional behaviour against teachers in adolescence: A longitudinal analysis from ages 11 to 15**

*Sara Valdebenito, University of Cambridge*

Previous research has suggested that a positive student-teacher relationship may increase children's engagement with school, improve academic performance and reduce the prevalence of children's externalising behaviour. Much less is known, however, about the impact of student interactions on teachers. In this study, we examined the reciprocal effects of teacher-student bond and oppositional behaviour against teachers from a developmental/longitudinal perspective. We hypothesised that a positive relationship between teacher and student can prevent oppositional behaviour against teachers and, at the same time, the reduction in oppositional behaviour can contribute to strengthening that positive bond between children and adults in schools. The study used autoregressive cross-lagged (ARCL) modelling to analyse a sample of 1'527 schoolchildren drawn from waves four to six (ages 11 to 15) of the 'Zurich Project on the Social Development from Childhood to Adulthood' ('z-proso'). Results suggested that, among boys, bidirectional effects between oppositional behaviour towards teachers and student-teacher bond were significant between ages 13 to 15. The more positive the student scored on the bond with teachers at age 13, the lower oppositional defiant disorder teachers reported 2 years later. Moderator analysis revealed that among girls, there was no significant effect across any lag, suggesting the absence of these transactional effects. This evidence suggests that interactions with teachers may follow vicious cycles of poor relationships and oppositional behavior particularly for boys in late adolescence.

#### **Promoting educational success through socio-emotional skills training**

*Giuseppe Sorrenti & Ulf Zöhlitz, University of Zurich*

This paper presents evidence on the long-term effects of a randomized intervention targeting socio-emotional skills in second grade primary school children. The teacher-run, low-cost, training program leads to a large and persistent boost of educational careers that remains visible 10 years after the intervention. Treated children become 7 percentage points more likely to attend 'Gymnasium', the highest of three secondary school tracks in Switzerland. We find limited evidence that children's socio-emotional skills changed and present suggestive evidence that treated children become more aware and critical of their own prosocial behavior.

#### **Victimization and educational outcomes: Can the bond with teachers make a difference?**

*Noemi Pereda & Ana Martina Greco, University of Barcelona*

Experiencing violence during childhood and adolescence have been linked with several educational outcomes, such as low achievement and truancy. Yet, there is little evidence about the potential effect that different types of victimizations or the accumulation of these experiences might have on educational outcomes. In addition, the promising hypothesis regarding the mediator or moderator role of the relationship between the student and the teacher has not been tested with longitudinal data. Thus, we aim to analyse: 1) whether different types of victimization at age 13 can predict school achievement, school commitment, self-perceived academic problems and truancy at age 17; 2) if the bond with teachers at age 15 can mediate or moderate the links found. Data from 1,454 adolescents (51.3% boys) with a mean age at first measurement considered of 13.6 years old (SD = 0.36) was used from the Zurich Project on the Social Development from Childhood to Adulthood (z-proso). Data was collected via self-report questionnaires in classroom settings. Significant differences in some school outcomes were found when comparing outcomes at first and last waves analysed. We expect to find victimization experiences at age 13 to be significant predictors of lower levels of commitment, achievement and higher levels of self-perceived academic problems and truancy at age 17. We also expect to find that these links are mitigated by the effect of the relationship established with the teacher reported by participants at age 15. Evidence from this study could support trauma-informed perspectives and raise awareness among teachers and professionals about the specific ways in which violence interferes with important educational outcomes.

**Poly-victimisation over time: subtypes, relational predictors and outcomes***Ingrid Obsuth, University of Edinburgh*

Poly-victimisation refers to multiple types of victimisation suffered by a single individual within the same time frame (e.g. Finkelhor, et al., 2005). Exposure to different types of victimisation may have a bigger impact than exposure to repeated incidents of the same type of victimisation on a wide range of mental health outcomes (Finkelhor, et al., 2011). While progress has been made in examining the prevalence and characteristics of poly-victimisation, much less is known about its developmental/longitudinal nature. The current study expanded on previous research by examining poly-victimisation biennially measured at four time points across adolescence from age 11 to 17 by applying longitudinal latent class analysis (LLCA). Consistent with previous research (e.g., Butcher, et al., 2016), we defined victimisation broadly to include peer violence, parental corporal punishment and sexual victimisation. We also considered victimisation in different contexts (school, home, street). Using data from the Zurich Project on the Social Development of Children and Youths (z-proso), we identified three separate groups of youths with distinct patterns of victimisation from age 11 to 17. The largest group represented young people who were least likely to be victimised in any way and at any time. The two smaller groups represented young people with different patterns of exposure to poly-victimisation over time. One group (non-parental poly-victimisation) represented youth who were most likely to be exposed to bullying at school from age 11 to 17. Youth in the other group (long-term parental victimisation) were most likely to be exposed to parental violence from age 11 to 17. Interestingly, however, young people in both groups reported experiencing violent victimisation outside of their home and school, but at different times. In addition, young people in the two poly-victimisation groups experienced different types of negative outcomes at age 17. While probabilities of membership in both groups were related to high rates of self-reported anxiety/depression; use of substances and delinquency were only related to the non-parental poly-victimisation group. Furthermore, group membership was also predicted by a number of relationship-based variables assessed at age 7. Specifically, membership in the low poly-victimisation group was linked to high levels of parent-reported parental involvement and low levels of erratic parenting at age 7; as well as teacher-reported popularity of the young person among their peers at age 7. In contrast, low levels of parental involvement at age 7 and teacher ratings of higher victimisation and isolation by peers at age 7 were related to membership in the non-parental poly-victimisation group. Finally, membership in the long-term parental victimisation group was predicted by corporal punishment at age 7. Our findings demonstrate that different categories of poly-victims can be identified that are distinctive from each other. Moreover, which pattern of poly-victimisation a young person is exposed to has implications for their mental health outcomes and can be predicted from age 7. With this knowledge, better strategies can be developed for identifying youths at risk as well as developing better prevention and intervention strategies.

**Childhood predictors of violent victimization at age 17: The role of early social behavioral tendencies***Margit Averdijk, University of Zurich*

The objective of this study is to assess how early social behavioral tendencies affect the risk of violent victimization in late adolescence.

We analyzed five waves of data from the Zurich Project on the Social Development from Childhood into Adulthood, a longitudinal sample of Swiss first graders (N = 1,138). Early social behavioral tendencies were measured at age 7 and included internalizing problems, externalizing behavior, prosocial behavior, negative peer relations, competent problem solving, dominance, and sensation seeking. Path analyses were conducted of the association between these tendencies and violent victimization at age 17.

Results show that several childhood behavioral tendencies predicted victimization 10 years later. Though this was the case for both genders, the number and type of significant risk factors differed. For males, sensation seeking, externalizing behavior, high prosociality, and negative peer relations at age 7 increased later victimization, whereas for females, dominance and externalizing behavior were predictive.

In conclusion, childhood social behavioral tendencies predict victimization 10 years later. Incorporating this finding into early prevention programs could reduce victimization in the long run.

### **Stability and change in bullying roles: A latent class and latent transition analysis**

*Izabela Zych & Vicente Llorent, University of Cordoba*

Bullying is a frequent, long-term aggressive behavior perpetrated by some children on their peers. Although studies about this antisocial behaviour have been conducted for over forty years, bullying rates are still high and new projects are urgently needed to understand and decrease bullying. Almost all the studies in the field are cross-sectional. Developmental change in bullying was very rarely described and previous research rarely allowed disentangling predictors from consequences and other correlates. Thus, the aim of this study was to discover bullying trajectories throughout the adolescence. This study used the z-proso data about bullying of just under 1000 school students followed up biannually from age 11 to 17. These data were analysed through latent class and transition analyses. It was found that perpetration and victimisation were relatively stable, with most of the children remaining in the same bullying roles or transitioning to uninvolved. Bully/victims were less stable and transitioned to perpetrators or victims. These findings have very important implications such as the possibility to study early predictors of different forms of involvement in bullying roles (e.g. persistent vs. occasional), predictors of transitions among the bullying roles and the design of tailored interventions to decrease bullying.

## **SESSION 3 – DEVELOPMENT OF PSYCHOPATHOLOGIES**

### **Does physical attractiveness matter? Gender differences in self-rated physical attractiveness and its impact on internalizing behavior and suicidal behavior across adolescence**

*Urs Hepp & Niklaus Stulz, Integrierte Psychiatrie Winterthur/Zürcher Unterland & University of Bern*

It is well documented that a negative perception of one's own appearance and depressive symptoms are associated with an increased risk for mental health issues such as eating disorders (Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004) and obesity (Schooler, 2013) across the entire lifespan. Body dissatisfaction is very common in adolescence (e.g., Neumark-Sztainer, Hannan, & Eisenberg, 2010) and has been identified as a risk factor in the development of depressive symptoms (e.g., Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006). Moreover, body attitudes/feelings have been linked to suicidal ideation (e.g. Brausch & Muehlenkamp, 2007) and self-harming behavior (e.g., Oktan, 2017) in adolescents. Generally said, body dissatisfaction can have a major influence on adolescent development with long-lasting effects.

Regarding gender differences, studies have shown that females in western cultures tend to internalize a thin appearance ideal, while males perceive a lean and muscular body as worth striving for (McCreary & Sasse, 2000). Moreover, there is a remarkable gender disparity in chronology of body dissatisfaction and depressive symptoms. Whereas in girls body dissatisfaction precedes depressive symptoms it is vice versa in boys.

Many of the studies conducted so far have used a cross-sectional design. Besides longitudinal investigations of body dissatisfaction and psychopathology, more research is necessary to help improve our understanding of potential gender differences in body satisfaction and their associations with negative (mental) health outcomes in youth.

The aim of the current study was to examine the role of self-rated physical attractiveness regarding psychopathological symptoms in adolescents and to identify possible gender differences. More specifically, we pursued three goals: 1. to identify whether the self-rated physical attractiveness is associated with internalizing behavior and suicidal behavior (cross-sectional and longitudinal), 2. to analyze whether there are different gender patterns and 3. to look at the stability of these effects across two time-points. The sample of adolescents stems from the Zurich Project on the Social Development from Childhood to Adulthood (z-proso). Two groups (low physical attractiveness versus high physical attractiveness) were built separately for females and males, based on the self-rated physical attractiveness at the age of 15. The two groups of low and high self-rated physical attractiveness were then compared to each other regarding internalizing behavior (anxiety and depression) and suicidal behavior (suicidal ideation and self-injury) in a cross-sectional manner. Moreover, the stability of these attractiveness ratings across two years (15 and 17 years of age) was analyzed. Among others, regression analyses were used. Preliminary results will be presented and discussed at the z-proso workshop.

## **Non-suicidal self-injury among adolescents in Switzerland**

*Anne Steinhoff & Lilly Shanahan, University of Zurich*

Recent research from the United States reports that adolescent non-suicidal self-injury (NSSI) is a severe public health problem (Monto, McRee, & Deryck, 2018). NSSI is thought to arise, in part, as a maladaptive coping mechanism that adolescents use to deal with emotional distress. In turn, NSSI is associated with additional mental health risks, including depressive symptoms and suicidal ideation. To date, longitudinal investigations of NSSI are rare in European community samples, and, indeed, largely missing in Switzerland.

The current study examined the prevalence, frequency, and longitudinal trajectory of NSSI in adolescents growing up in Switzerland. It also investigated demographic and psychosocial risk factors (e.g., adverse life events, schooling trajectories) associated with the emergence of NSSI. Furthermore, the study examined NSSI within the broader context of adolescent mental health problems.

Data came from the Zurich Project on the Social Development from Childhood to Adulthood (z-proso). Self-reports of NSSI are currently available at ages 13, 15, and 17. Frequency of NSSI in the past month was assessed on a five-point scale ("never" to "very often").

The overall prevalence of NSSI was at 13%, 11%, and 10% for ages 13, 15, and 17, respectively, which is within the range reported by recent cross-national reviews (Muehlenkamp et al., 2012; Swannell et al., 2014). Remarkable sex differences in the prevalence and severity of NSSI emerged, which, in turn, changed with age. In males, the prevalence of NSSI declined from ages 13 to 17; in females, prevalence peaked at age 15, when 1 in 6 females reported NSSI in the past month. Longitudinal stability of NSSI increased with age, particularly in females. Furthermore, NSSI was positively correlated with depressive symptoms/anxiety and also with suicidal ideation. The latter association strengthened with age in females: 60% and 76% of females with NSSI also reported suicidal ideation at ages 15 and 17.

Results of bivariate logistic regression analyses that predicted any NSSI at a given age with select life events in the past one or two years show that exposure to sexual harassment/assault, relationship breakup, and grade retention/failure of an important exam were associated with increased risk for NSSI across all ages. Parental divorce predicted NSSI in early adolescence only; death of a loved one did not predict NSSI. Future analyses will test multivariate models that also adjust for socioeconomic factors. Future analyses will also test whether social support and connection weaken associations between adverse life events and NSSI.

Our study is the first large-scale longitudinal community study of NSSI in Switzerland, and provides new insights into this troubling behavior that affects many young people at some point in their lives.

## **Developmental trajectories of ADHD symptoms across childhood and adolescence in z-proso**

*Aja Murray, University of Edinburgh*

Recent studies have suggested that there is considerable variation in the age of onset and course of ADHD symptoms across development; however, we currently know very little about the causes of this variation and whether there are meaningful etiological and other clinically important differences between those who show different trajectories. In this talk, I present results from a z-proso, including n=1571 youth with ADHD data at ages 7,8,9,10,11,13 and 15. Using a growth mixture modelling approach, I evaluated whether developmental trajectories of ADHD symptoms characterised by earlier versus later onsets are associated with different patterns of risk factors and outcomes. Results suggested that those with a later onset showed the expected hallmarks and sequelae of ADHD but overall lower levels of risk factors and psychosocial impairment. In addition, females were more likely to follow a trajectory characterised by later onsets. Based on these findings, I question the current 'age of onset' criterion that stipulates that symptoms must be present before age 12 for a diagnosis to be given. I argue that this may exclude those who could benefit from diagnosis and contribute to a diagnostic bias against females. I suggest that replacing this criterion with 'developmental subtype' specifiers could improve the clinical validity of ADHD diagnostic criteria.

**Shared and divergent risk factors for violent extremist attitudes and interpersonal violence**

*Amy Nivette, University of Utrecht*

This paper investigates the differential developmental predictors of violence and violent extremism using longitudinal data from a sample of Swiss youth. There is some debate in the literature as to whether the developmental processes and risk factors that lead to violent extremism are distinct from those that lead to criminal violence and aggression. In practice this problem is difficult to address due to the lack of prospective longitudinal data measuring both violent outcomes. This project therefore uses seemingly unrelated regression techniques that allow us to statistically distinguish which childhood and adolescent risk factors are shared and/or unique across types of violence. In this way, we are able to determine to what extent criminal and extremist violent attitudes stem from the same developmental processes. Specifically, we compare the effects of a range of social and psychological risk factors on justifications for violent extremism and interpersonal violence. This is particularly valuable for prevention and intervention programs in education and parenting. If there is substantial overlap between developmental predictors, then it would be feasible to apply existing evidence-based violence prevention programs to tackle radicalization and violent extremism among youth.

**The reciprocal nature of the relation between exposure to risk factors, short-term mindsets and delinquency**

*Jean-Louis Van Gelder & Ivy Defoe, University of Twente*

Low self-control, and related constructs reflecting a short-term mindset (i.e., shortsightedness), such as impulsivity, sensation-seeking and inability to delay gratification, are generally regarded as stable individual dispositions in criminological research. Emerging evidence, however, contradicts such a static view (e.g., Burt et al. 2014; Murray et al. 2016; Na & Paternoster, 2012; Hay & Forrest, 2006). Recent research using the z-proso dataset (Van Gelder, Averdijk, Ribeaud & Eisner, 2018a, 2018b), for example, show that harsh and erratic parenting practices as well as sanctioning predict short-term mindsets, which in turn result in crime. Furthermore, although short-term mindsets are usually regarded as a predictor of crime, they might equally be an outcome. In the present contribution, we elaborate on these assumptions and outline research plans to examine the development of (different indicators of) shortsightedness over time. Specifically, this research will address the reciprocal nature of exposure to contextual risk factors, short-term mindsets, and delinquency. This will establish the extent to which observed changes in shortsightedness are consequential for delinquency and what factors influence such changes from childhood to young adulthood.

**Decision-making games in z-proso**

*Heiko Rauhut & Alexander Ehlert, University of Zurich*

Our study within z-proso combines observational with experimental data and particularly focuses on fundamental human capabilities such as honesty, cooperation and trust and their relation to delinquency. We implemented a series of simple decision-making games, in which subjects claim, bargain or steal money from each other and thus face real consequences of their own and others' actions. Our study tries to improve the understanding of human behavior by raising causal, observational, and methodological questions.

Previous evidence suggests that trust is an indispensable requirement for social and economic success, we therefore aim to explore the determinants of trust and the closely related concept of positive reciprocity. Further, our study allows to investigate the use of signals and their effects on trusting behavior across strategic and non-strategic conditions. Hereby, we are particularly interested if people with criminal tendencies process suspicious information differently and use such signals strategically to cheat others.

Another important aspect we investigate is the tendency to punish unfair behavior, even at individual costs. Negative reciprocity has been found to be of significant importance for the establishment and maintenance of cooperation and norms. Within z-Proso, we therefore ask the question who actually are these strong reciprocators. We are particularly interested in whether individuals with socially undesirable delinquent tendencies are those who maintain cooperation and fairness.

We also address general methodological concerns for both, observational and experimental studies. A major threat for the validity of survey data proposes subjects' tendencies to lie. We developed a method to identify survey items that suffer particularly from lying behavior (e.g. due to social desirability) as well as particularly trustworthy responders. In experimental studies, abstract games are used to mimic real world situations to infer actual behaviors. We test the external validity of the public goods game on a diverse sample using detailed information about respondents' police records including fare-dodging.

Overall, this study combines large-scale survey data with monetarily incentivized behavioral experiments to leverage the understanding of human essential behavior and research methodology.

**Decades to minute - The experience sampling study within z-proso**

*Aja Murray, University of Edinburgh*

Longitudinal cohort studies such as z-proso provide invaluable insights into the long-term developmental processes underpinning traits such as aggression. On the other hand, experience sampling designs provide insights into the day-to-day thoughts, feelings, cognitions and experiences that differentiate individuals with different trait levels of aggression. This year, n=300 participants in z-proso will take part in an experience sampling add-on where they will complete measures of affect, cognition, experiences and behaviour related to aggression, giving us measures of participant experiences in near real time and in the flow of their daily lives. This data will be linked to the main z-proso data in order to help bridge the gap between long term developmental processes and short term day-to-day processes underpinning aggression. In this talk, I will discuss the results of a pilot study demonstrating the value and feasibility of the approach, including evidence on the validity and reliability of the Aggression-ES measure developed and validated specifically to measure aggression in experience sampling studies. I will then discuss the future research plans for the to-be-collected experience sampling data in z-proso.

**Stress and substance use in young adulthood: The z-proso hair data collection**

*Lilly Shanahan & Boris Quednow, University of Zurich*

This presentation will introduce the background, methodology, and team involved in the “Stress and Substance Use in Young Adulthood” data collection from z-proso participants at age 20 years old. In this subproject of the 8th wave of z-proso, hair samples were collected. These will be tested for an array of legal and illegal drugs as well as for steroids from the hypothalamic-pituitary-adrenal (HPA) axis (e.g., cortisol) and hypothalamic-pituitary-gonadal (HPG) axis (e.g., testosterone). While collecting hair from z-proso participants, we also collected waste water from the city of Zurich which will be tested for drug metabolites. This data can be used to contextualize the individual-level self-reported and objective hair data from z-proso’s 8th wave.

Together, this new data collection pursues several aims, including, 1) to examine how social stress during childhood, adolescence and young adulthood are associated with stress-related hormones during young adulthood, 2) to examine how social stress and substance use in childhood, adolescence and young adulthood are associated with problematic substance use during young adulthood, and 3) to test the prevalence and concordance of self-reported drug use and objective measures of drug use.

The presentation will end with a discussion of the opportunities and limitations that come with assessing objective data of drug consumption and stress in longitudinal studies and a sneak peek of preliminary findings regarding drug use in the z-proso study to age 17.

**Linking early peer victimisation and exclusion with later gene expression patterns**

*Michael Shanahan & Justin Chumbley, University of Zurich*

Our research examines associations between early peer victimisation and exclusion (waves 4-7; ages 11 to 17) and a gene expression signature indicative of immune functioning and inflammation in the latest wave (the CTRA, at age 20). We will discuss several novel features to our design. First, we identified a subsample of respondents who were comparable in important respects except for their bullying victimisation experiences through adolescence. This matching procedure, coupled with G estimation for confounds occurring from wave 8 onwards, allows us to clearly state the assumptions under which our analyses could be interpreted in causal terms. Second, we will be collecting gene expression data (mRNA abundance) to examine mRNA signatures indicating possible compromises in inflammation and immunity. That is, at the level of genetic activity, are bullied adolescents more distressed as adults? And third, we will examine interesting biological and psychological covariates of these signatures, including an extensive panel of biomarkers and behavioural-based measures of stress sensitivity. Our design allows us to study bully victimization through adolescence and its implications how sensitive people are to threat, biomarkers of distress, and the regulation of gene expression.



## **The impact of developmental trajectories of violence and victimization on the neurobiology of social decision-making**

*Todd Hare & Ana Cubillo, University of Zurich*

Early life experiences of abuse and violence have been shown to have profound and lasting influence on the neurocognitive functions that drive behavior. Thus, they have been associated with a range of negative outcomes in adult life, from higher incidence of psychiatric and physical disorders to increased criminal behavior (Caspi et al., 2002, Moffitt et al., 2002, Turanovic and Pratt 2015). Furthermore, there is evidence showing that individuals who were victims of violence and abuse during childhood are more likely to go on to become perpetrators in adolescence and adulthood (MacMillan et al., 2001, Widom 2014). However, the lack of comprehensive data combining measures of life-course events and trajectories with data on biological states and functions complicates the accurate understanding of the role of individual and timing factors of such adverse experiences on the development of typical and atypical social and self-regulatory skills in relation to brain function and other physiological processes (Hyde et al., 2013, Blair et al., 2016).

We aim to address this by adding measures of brain structure and function to an ongoing longitudinal study of the life-course development of violence and crime, z-proso, that has been running with 1,400 Zurich-area youth since 2004. Our study will investigate the neurobiological substrates of social decisions in a structured social interaction paradigm in a relatively large subset (N=300) of the z-proso cohort would provide the unique opportunity to link detailed information on life-experiences and developmental trajectories to behavioral patterns and neurobiology in individuals at the transition between adolescence and adulthood in terms of brain maturity and self-regulatory ability. The brain imagining paradigm has been tailored so that it allows us to test aspects of social information processing including emotion perception, learning, value computation, and strategic self-regulation in a novel fashion. We will present preliminary results from a pilot sample of 50 healthy young adults, who performed the paradigm while inside an fMRI scanner.

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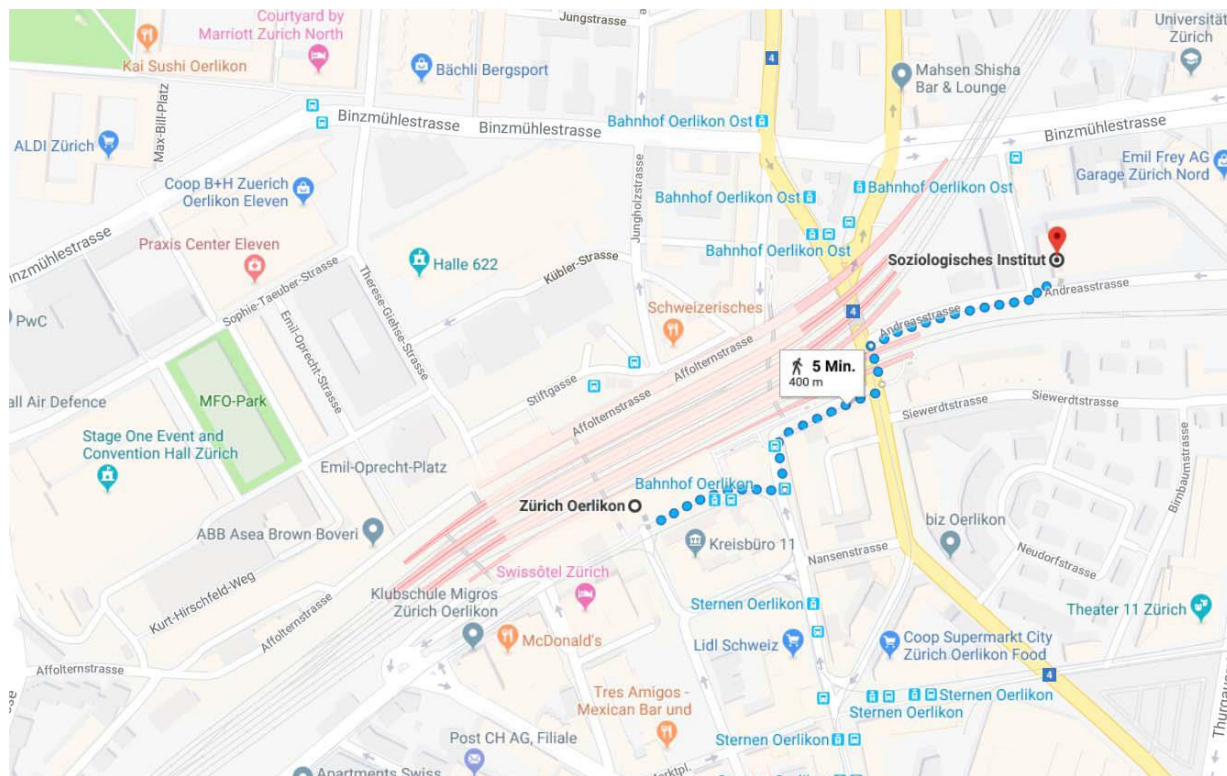
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## ACCESS PLAN

The z-proso workshop will be carried out at the AND building of the Oerlikon campus of the University of Zurich which is a five minutes' walk from the Oerlikon train station. To get there by train, tram or bus please consult the [SBB timetable](#) or enter your route on [Google maps](#). You will be there in five minutes both from Zurich Main Station ("Zürich HB") and from the Airport. The exact address is Andreasstrasse 15, 8050 Zürich.



In the AND building cross the mall hall to get to the lifts in the center of the building ("Lift B"). Get up to Level 5, cross the gangway across the mall and you will be in front of the Institute of Sociology. Enter there, turn to the left, walk about 20 meters and you are there at the seminar room AND 5.31.

No worries, everything will be indicated from the entrance 😊