

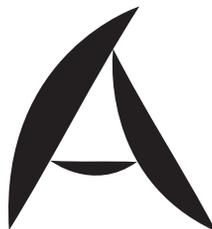
THE FINNISH FOUNDATION
FOR ALCOHOL STUDIES



REPORT ON ACTIVITIES

2010

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GENERAL OVERVIEW

In 2010, the projects funded by the Finnish Foundation for Alcohol Studies resulted in the publication of four academic doctoral dissertations and 11 new peer-reviewed articles in international scientific journals. Five other scientific papers were published. Four ongoing research contract projects received additional funding and two new research contract projects were launched. One of these new projects will explore the intertwined connections of mind, body and socio-culture in the alcohol-related thinking from the late 18th century to mid-19th century among European physicians. The second one will study drug-related deaths and risk management both from institutional and user point of view. Other contract projects will be described below under the title *Research activities*.

The Foundation participated in the international research consortium “Theories of addiction and images of addictive behaviours (IMAGES)”, funded by the Academy of Finland, by doing research on the history, nature and etiology of addictions. Based on a funding agreement with the Ministry of Health and Social Affairs, the Foundation allocated approximately 300 000 euros for grants to study gambling problems.

The Foundation kept its office at the National Institute for Health and Welfare (THL).

ADMINISTRATION

The Board of the Foundation was composed of three members appointed by the Ministry of Social Affairs and Health, three appointed by the Ministry of Education, two appointed by the Federation of Finnish Scientific Societies, and one by the Finnish Alcohol Retail Monopoly. The majority of the Board must consist of academically established scientists with special expertise in alcohol research. An Executive Committee composed of the scientist members of the Board and advisory members prepares and reviews the issues falling within the Board’s field of responsibility.

Research Director is the only full-time staff member of the Foundation. *Kari Poikolainen* retired from the post on September 30th and was succeeded by *Tomi Lintonen*. A contract between the Foundation and the National Institute for Health and Welfare (THL) provided administrative and technical support for the Foundation.

RESEARCH ACTIVITIES

The Foundation awards two types of grants: ordinary grants to support short-term projects proposed by the scientific community, and contract grants ensuring long-term funding of projects deemed to be of major significance. In 2010, the Foundation expenditure totalled 861 233 euros.

This report reviews the contract grants included in the research programme of the Foundation. It does not cover the research funded by ordinary grants.

RESEARCH CONTRACTS AND COLLABORATIVE PROJECTS

The ongoing contract projects progressed as follows:

184 *Women and Alcohol in Finland 1917–1987.*

Prohibition has a strong effect on Finnish conceptions of alcohol and alcohol policy. The image of prohibition in earlier research has been quite masculine. Research has concentrated on the “upper level” actors in society: the parliament, the government and the leaders of the temperance movement. The development of women’s opinions on prohibition is especially interesting. All women were supposed to support the prohibition. However, the referendum in 1931 revealed that a large majority of women voters supported repeal. This research approaches the history of prohibition from a different angle by combining methods and theories of history of mentalities and social history with gender history. The research material consists of press articles, archives of women’s organisations and temperance organisations, as well as organizations pro and against prohibition and personal archives of central characters. Both discourses and practices are examined. In discussion of prohibition women based their right to participate in the political discussion and action on a hundred year old ideological continuum, according to which home and family were the central areas of interest. These were linked to questions of morality and social policy. On the other hand, women presented themselves as working taxpayers, voters and equal citizens. The most crucial issue in women’s discussions was whether prohibition improved or deteriorated the temperance of families. That is to say: did prohibition prevent fathers, husbands and sons from drinking. In media and inside the organisations temperance and prohibition were defended almost until the end of the prohibition era. This discourse was in conflict with the discourse of every day conversations and the practices in which alcohol was present. The work on the dissertation (a monograph) began in 2002 in a project Al-

cohol and Women in Finland 1917–1987. Other researches in the project were Matti Peltonen and Hanna Kuusi. Results of this project have been reported in *Alkoholien vuosisata: suomalaisten alkoholiolojen vaiheita 1900-luvulla* (SKS 2006). Kaartinen has continued her work with a personal grant from The Finnish Foundation of Alcohol Studies during 1st January 2008 – 31st March 2010. The University of Helsinki has financed the research in July–September 2010. The manuscript was submitted for pre-examination on 15th February 2011. Researcher: *Aija Kaartinen*, The Finnish Foundation for Alcohol Studies. (aija.kaartinen@helsinki.fi)

185 *Sense of Agency in Narrative Processes of Repeatedly Convicted Drunk Drivers.*

The post-conviction treatment programs for drunk drivers have mainly approached DD either from the viewpoint of traffic education or alcohol dependence. The recognition of DD offenders' poor motivation to treatment and the diversity within the population of DD offenders have contributed to the pressure towards offering different treatment options and individually tailored treatment. This study draws attention to clients' agency construction. The study material consists of the five-hour voluntary counselling program as part of the community service by 30 drunk drivers. Counselling sessions were video-taped and transcribed. The theoretical and methodological approach in the study is narrative. The project was funded by The Finnish Foundation for Alcohol Studies during years 2002–2005. One peer-reviewed article has been published in *Counselling Psychology Quarterly* and two oral presentations were held in Finland. The study report of the total study material will be finished in 2010. The first study examined the sense of agency as it appeared in the narratives of two repeatedly convicted drunk drivers during the five-hour counselling sessions. An analysis of the narrative processes showed the drunk driving (DD) of the narrators as opposite solutions relating to conflicts concerning their sense of agency; for the NON-AGENTIVE CLIENT (NAC), DD as a compulsive action solution represented an abandonment of her agentive position, while for the STRONGLY-AGENTIVE CLIENT (SAC), consciously chosen DD represented an attempt to assert his personal autonomy. The second study consisted of an analysis of total 30 stories of drunk drivers. It focused on the agency positions of the protagonist-narrators and their accountability in the narration of DD: five story types of agency were found. In the stories of provoked agency (11), the protagonist-narrators constructed DD as a non-reflected mundane everyday activity, and the meaning of DD was inconsequential in terms of responsible agency. In the stories of weak agency (8), the narrators departed from responsibility for DD by evaluating the protagonist's agency as problematic and by positioning the narrator as a

separate agent from the protagonist. In the stories of egotistical agency (5), the protagonist-narrators reactively defended their agency in DD and the responsibility for DD was explicitly denied. In the stories of akratic agency (3), the narrators reflected DD as the protagonist's way of gaining sense of the autonomy through opposing and acting against the will of the narrator. The narrators processed the acting against their own will as problematic interpersonal orientation. Reflective narration constructed relational agency and possibilities for a more responsible agency. In the stories of disowned agency (3), DD was told as an event instigated by forces outside the protagonists' command. The omission of subject and agent positions in the portrayal of the protagonists as drunk drivers evaded all ownership, agency and responsibility from the narrators. Researcher: *Minna-Leena Pulkkinen*, Department of Psychology, University of Jyväskylä.

190 *Harm Reduction Approach and Low Threshold Services in Finnish Drug Care. An Ethnographic Account of Needle Exchange Services for Intravenous Drug Users.*

This ethnographic research investigates changes in the Finnish drug and welfare policies from the perspective of needle exchange and health counselling work for intravenous drug users. Needle exchange work was started in Finland at 1997 and it brought about new ways to think of and handle drug problems. At the same time, Finnish welfare policies were changing from state-centered and universal ones to more fragmented and individualistic ones. The needle exchange and health-counselling work are used in this research as a window to these changes. The research gives an overall view of the needle exchange work in Finland: how the work is carried out in everyday life, what kind factors contribute or make it harder for the workers to achieve their goals and what kind of new possibilities the work has opened for drug users – to think about themselves, to control their lives as well as their health. The research describes and analyzes the current welfare policy reform, particularly the ways different kinds of social problems are managed under rubrics such as "client-centredness", "low threshold", "harm reduction", "activation", and "peer work". The data consist of field notes based on the observations made in four needle exchange facilities located in the Helsinki Metropolitan area, interviews made both with the workers and the clients, and various documents describing the work from different aspects. The data were gathered during the years 2003–2007. The outcome of the project will be a Ph.D. dissertation of 4 referee articles and a concluding summary. The first article was published in 2007 and two others in 2009. The research will be completed in year 2010. Researcher: *Riikka Perälä*, The Finnish Foundation for Alcohol Studies.

196 *Drugs and Societal Problems.*

The subject of this study is the drug market in Helsinki area. The research belongs to the tradition of ethnographic studies. It uses participating and non-participating observation, conversations and open interviews with the people who have various roles in the Helsinki drug markets. The research also exploits interviews with the law enforcement and customs officers, and the pre-trial phase of the criminal process documents. Actual research was started at the beginning of the year 2004. The Ph.D. thesis was completed in 2010. Researcher: *Jussi Perälä*, The Finnish Foundation for Alcohol Studies. (jussi.perala@thl.fi)

199 *The Impact of Changes in Pricing and Availability of Alcohol in 2004 on Alcohol-Related Harm: a Unique Natural Experiment.*

A large reduction in the price of alcohol is a unique event even in the global context, and it has been predicted to have a notable impact on alcohol-related problems. The aim of the study is to assess to what extent these changes affect alcohol-related mortality, hospitalisation and crimes in Finland. In this study, the methods include a before – after design, a time-series analysis, and an area-level analysis. The data have been obtained from Statistics Finland, The National Institute for Health and Welfare (THL; former Stakes) and the Police. The sub-study no. 5 has been completed and accepted for publication in an international scientific journal in 2010 (see below). The summary part of the dissertation thesis was also completed. I defended my doctoral dissertation publicly on 10th April 2010, where docent Ph.D. Jussi Simpura was acting as an opponent. The title of my doctoral thesis is “The effects of the 2004 reduction in the price of alcohol on alcohol-related harm in Finland: A natural experiment based on register data”. The thesis was accepted with the grade of *eximia cum laude approbatur*. The fifth and final scientific paper of this study project has been accepted for publication during this year: Herttua K, Mäkelä P, Martikainen P. The effects of a large reduction in alcohol prices on hospitalisations related to alcohol: a population-based natural experiment. *Addiction*. Accepted on 3rd November 2010. I have presented the main results and policy implications of this study project in two international conferences and in a number of national seminars and meetings. Researchers: *Kimmo Herttua*, University of Helsinki, Department of Sociology, *Pia Mäkelä*, Stakes, and *Pekka Martikainen*, University of Helsinki, Department of Sociology. (kimmo.herttua@helsinki.fi)

201 *Sociability, Gender and Drinking. An Ethnographic Study of Young Adults' Night Club Behaviour.*

Drinking in Finland becomes more common year by year, but in the public discussion it is held surprisingly apart from the actual activity of drinking. Drinking is reviewed as consumption statistics or harm costs, or it is reduced to invisible biochemical processes, but the lived and experienced motives, activities, and consequences of drinking receive very little attention. This is even more surprising as the idea of a choosing, active and competent individual is so well celebrated elsewhere in cultural and political discussions. The study analyzes partying, a culturally central drinking occasion, that includes intoxication-oriented drinking and free celebration in public nightclubs. In addition to drinking behaviour, partying thus expresses the changing expectations of behaviour in public places, such as gender roles. The study analyzes partying and party drinking as a ritual, a production and pursuit of social emotions, in which the partygoers make concrete their most important values and ideals. The main data is ethnographic observation in nightclubs in Helsinki, and it is supplemented with partygoers' qualitative interviews and personal diaries. In the study I have observed that the central mechanism of partying is an intensive repetition of a few basic activities within small groups of partying friends or acquaintances. The basic partying activities are dancing, talking, watching other people and other stimuli of the nightclub, and drinking; and the partygoers transmit and receive social emotions in their small groups in and through these activities. In the study I analyze the social and emotional logics of these activities more closely. In the study I have also recognized three different genres of partying in which these activities are conducted in different styles and manners; different genres concretise different social values and ideals. The Fool Genre generates a strong atmosphere egalitarianism and collectivism amidst the partygoers; in the Cool Genre the partygoers highlight their individual autonomy and authenticity; and the Premium Genre celebrates individual status and achievements. Also the regulation of drinking and gender differences appear differently in different genres. Unlike one might think, genres are not differentiated according to the partygoers' cultural or social status. Genres are not differentiated according to the nightclub, either. In most nightclubs there are different sub-areas of different genres; and the same groups often adopt different genres during one and the same night. On the other hand, partying individuals adopt different genres also with different groups of friends during different party occasions. In the study, this social versatility is analysed as a central ideal of the way of life of young adult Finns, and nightclubs are analysed as a specific public space reserved for extensive expressivity of this kind. The study was started in 2003, the final report (monograph) is being written

at the moment. In 2008, two referee articles were published in the project; two more articles will be published in 2010. Four international and two Finnish presentations were given. Researcher: *Antti Maunu*, The Finnish Foundation for Alcohol Studies. (antti.maunu@helsinki.fi)

205 *Biologic and Molecular Mechanisms in Fetal Alcohol Disorders.*

Most common clinical features of fetal alcohol syndrome (FAS) are prenatal and/or postnatal growth retardation, mental retardation, facial dysmorphogenesis and cardiac septal defects. The support and treatment of these children causes considerable costs to the society. Alcohol abuse during pregnancy causes several disorders especially in the central nerve system of the embryo. The deleterious effects of ethanol to the developing brain may be, at least in part, due to effects on cholesterol and steroid homeostasis. The aim of this project is to study the mechanisms behind FAS disorders by global analysis of consequences of acute alcohol dose in gene expression and protein synthesis of placenta and embryo proper. Pregnant mice with two intraperitoneal injections of ethanol during the early pregnancy were used as a model. We have studied defects in lipid synthesis and transfer of molecules from mother to embryo through placenta. Based on our animal studies and a DNA microarray analysis we have studied further the metabolic routes affected by alcohol during embryonic development, especially focusing on cholesterol synthesis. On the basis of these results we have prepared two manuscripts, 1) Alcohol consumption during pregnancy disturbs cholesterol synthesis and lipid metabolism in placenta. 2) Malfunction of angiogenesis gene family is associated with malformation of FAS placenta and permeability changes. Researchers: *Markku Savolainen*, *Saeid Haghighi Poodeh* and *Tuire Salonurmi*, Department of Internal Medicine, University of Oulu. (markku.savolainen@oulu.fi)

206 *Identification of Hazardous Drinkers by Biological Markers.*

The main aim of the present study is to search for biological markers which could effectively be used in detecting risky drinkers, e.g. hazardous and/or harmful drinkers, by using modern proteomic tools. The design includes a whole spectrum of studies on well-defined human- and animal samples. Traditionally, increased drinking is detected by measuring the level of glutamyltransferase and also the sialic acid – lacking transferrin. However, none of the current markers is specific. An early intervention is necessary to prevent the crossing the limits of hazardous drinking and entering large-scale consumption. Indeed, the early detection of alcohol overconsumption among people whose drinking is not yet causing clear problems has been shown to be a good means to inhibit the ill effects of hazardous drinking. The main aim of the present study is to search for new protein biomarkers which could be used to detect and predict hazardous

drinking reliably. The animal experiments were conducted at the National Institute for Health and Welfare during the autumn 2007 using rat strains with opposing preferences towards ethanol: AA (Alko Alcohol) and ANA (Alko Non-Alcohol). These strains are one of the first strains established by selection. The experiments were divided into two parts, continuous and periodical drinking. In the continuous drinking study the rats were drinking solely 12 % ethanol (akr, chronic exposure), ethanol/water alternating (skr, semichronic exposure), quinine (kin) or water throughout the experiment. Samples were collected at four timepoints: 0, 8, 16 and 25 weeks. The periodical drinking study consisted of regular alternating periods of heavy intoxication and soberness. In this experiment the rats were divided into ethanol (15 %), sucrose and water groups. The intoxication periods lasted four days at a time and the intoxication was accomplished by intragastric intubations three times a day. We use in this study the most modern proteomic tools, e.g. MALDI-TOF/TOF (matrix assisted laser desorption ionization time-of-flight) and ESI-IT (electrospray ion-trap) mass spectrometers, two-dimensional gel electrophoresis (2-DE) and Ultra-high resolution Ion Mobility mass spectrometry equipped with nano UPLC 2-D liquid chromatography. This report covers 5 months in the year 2010, during which we have applied methods of proteomics, optimized conditions and improved repeatability and started the actual analyses as well. We continued to analyze the plasma samples in 2010. We used the new first step depletion of high-abundant plasma proteins by immunoaffinity chromatography "Plasma Multiple Affinity Removal Spin Cartridges for the Depletion of High-Abundant Proteins from Mouse Proteomic Samples" from Agilent Technologies to a product of SIGMA Aldrich, due to the new and better affinity material provided by the new supplier. Also, this kit was directly applicable for subsequent analyses without additional buffer exchange requirements. Four groups were analyzed by single sample analysis with dual repetitions. At the time points 0 and 25 weeks from all strains and single individuals have been preliminary analyzed. According to these results we found that: 1) 19 proteins were differently expressed in the water drinking rats when compared to the chronic drinkers, 14 proteins were differently expressed in the chronic drinkers and 38 proteins were similarly expressed in both groups; 2) 44 proteins were differently expressed in the water drinking rats when compared to the semi-chronic drinkers, 5 proteins were differently expressed in the semi-chronic drinkers and 13 proteins were similarly expressed in both groups; 3) 40 proteins were differently expressed in the water drinking rats when compared to the quinine drinkers, 6 proteins were differently expressed in the quinine drinkers and 15 proteins were similarly expressed in both groups. Those measurements will be continued and statistically and biochemically verified in 2011. Researcher: *Marc Baumann*, Biomedicum, University of Helsinki. (marc.baumann@helsinki.fi)

207 *Living between Two Families – a Qualitative Study of the Surviving Strategies and Functioning of Children in Foster Care.*

The liberal influences on the governing practices in the field of child welfare, such as legal demands, e.g. in the Child Welfare Act (417/2007), to notice the agency of children, is in the forefront of this study. The more precise interest lies in the question of what “governing through freedom” (including negotiated practices, agreements and contracts) actually means in the practices of the so called Professional Foster Homes, where coercive practices inevitably are also at work when dealing with difficult problems such as substance abuse. The areas of interest are: 1. What does the focus on children’s own agency and right of participation mean, in practice, for children with an abusive background and/or with own substance abuse problems? 2. What kind of (problem) identities, ideological goals and life perspectives are created and re-created in the setting? 3. What kind of role does the professional foster home take in the field of child welfare? Theoretically, the study falls firstly into the field of study of governmentality, where the logics of dominant discourses and social practices are studied. Secondly, the study falls into the category of institutional ethnographies, paying attention to the identity formation that takes place within the context of a specific institutional setting. At the moment, three articles have been accepted for publication and the fourth has been submitted to a journal. During the years 2009–2010, the following articles have appeared: ”Re-negotiating Personal Integrity in Finnish Child Welfare” in *International Journal of Children’s Rights*, and ”Vulnerable, guilty or on their own? Institutional Identities of Substance Abusing Children and Families within Finnish Child Welfare” in *Nordic Studies on Alcohol and Drugs (NAT)*. The third article will appear in March 2011 in the publication ”Lapset, nuoret ja uudet hallinnan käytännöt (eds. Mirja Satka, Timo Harrikari, Elina Pekkarinen ja Leena Alanen)”. The fourth article ”Foster Care Partnerships in Finland 1990–2010: From social task to ensuring better market share?” has been sent to the *Law and Childhood Studies* for a referee. Results from the last article were presented at a colloquium in July 2010 organised by University College London and at the yearly Winter School Days in September organised by SOVAKO, the Finnish Doctoral Program in Social Sciences. Researcher: *Petra Kouvonen*, The Finnish Foundation of Alcohol Studies. (petra.kouvonen@thl.fi)

208 *Changes in the Drinking Culture in the Light of Drinking Habits Surveys in Finland, 1968–2008.*

The purpose of the study is to present an overall description of the changes in the Finnish drinking culture over the last four decades by investigating various elements of the drinking culture. The study consists of four sub studies on (1) changes in attitudes and norms around drinking, (2) age, period, and cohort effects on light and binge drinking, (3)

changes in drinking situations, and (4) changes in the socioeconomic differences in drinking patterns. The main data is based on six national drinking habits surveys made in 1968–2008. Various statistical methods are applied in the analyses. In 2010, a second article belonging to the first sub study was published in the book *Suomi Juo*, and a revised manuscript of the second sub study was submitted to an international journal. A manuscript of the third sub study was written and the results were presented in an international conference. Literature review for the fourth sub study was started. Researcher: *Janne Härkönen*, The Finnish Foundation for Alcohol Studies. (janne.harkonen@thl.fi)

209 *Governing the Risks of Prenatal Alcohol and Drug Use. An Ethnographic Case-study of a Finnish Maternity Clinic for Substance Abusers.*

In Finland, Fetal alcohol syndrome (FAS) came to public awareness in the 1980's and subsequently various new forms of professional interventions came into existence. This study looks primarily at the everyday life at one maternity clinic which offers prenatal care and counselling to pregnant women with substance abuse problems. What kind of logic structures the encounters between the professionals and their clients? The concepts of power and agency are central in the analysis. The approach is ethnographic and the primary data consists of participant observation notes collected at one clinic during a period of seven months and interviews with professionals and their clients. The study begun in 2005 and will be completed in 2010. The Ph.D. study will consist of 4 articles and a conclusion. The first article provides a nuanced account of how the professionals try to intervene in their clients' lifestyle without jeopardising their autonomy. The second article analyses how the prevailing consumerist rhetoric underlining user choice and involvement is translated into everyday encounters between service providers and users in two distinct institutions. Institutional background and gender are identified as important factors in shaping the realisation of user involvement. The third article looks at the wider social and cultural context: how and by whom prenatal substance abuse was constructed as a serious problem in the Finnish society since the late 1970s? The fourth article deals with the pregnant women's perspectives and agency, and was submitted in 2010. Researcher: *Anna Leppo*, The Finnish Foundation of Alcohol Studies.

210 *Drug induced Plasticity on Dopaminergic pathway; mechanisms and meaning from synaptic level to behaviour.*

Plasticity of the nervous system is the basis for memory and learning. Especially the glutamatergic synapses in many brain areas are well known to be able to maintain different kinds of long-lasting changes that could be important in the storing of information. Addiction could be seen

as a maladaptive learning phenomenon. Drugs of abuse are able to induce plasticity in some critical brain areas like the midbrain dopamine pathways, already after single exposure to a drug or after more continuous administrations. This is thought to enable the drugs of abuse to persist learning that guides in further use of the drug despite all the emerging negative effects. These same brain pathways work in the natural reward behaviour and reward guided learning. Our project started with our finding, that the benzodiazepine diazepam induces similar modifications in midbrain's dopaminergic neurons as other classical drugs of abuse, for example stimulants, opioids and ethanol do. In this project, we aim to further clarify the neurobiology of drug-induced plasticity in addiction, and more specifically in benzodiazepine dependence. In the study we use both wild type mice and a genetically modified mouse line that expresses a fluorescent marker in the dopamine neurons, thus enabling the visualization of the neurons of our interest. The meaning of the found diazepam induced modifications is studied with behavioural models (locomotor activity, sensitization to drugs, conditioned place-preference). Morphine and amphetamine are known to affect the locomotor activity of the mice and induce sensitization and tolerance, depending on the program of administrations. In these phenomena, the activity of our target neurons, the dopaminergic neurons in midbrain, is crucial. We tested how morphine or amphetamine affects the behaviour when diazepam has changed the glutamatergic regulation of these dopamine neurons. The results imply that the morphine induced hyperlocomotion was attenuated 24–72 hours after diazepam pre-treatment. On the other hand, the pre-treatment had no effect on amphetamine induced acute hyperlocomotion, but attenuated the sensitization induced by amphetamine in the following three days. This means that 24–72 hours after diazepam, when the glutamatergic control of dopamine neurons in ventral tegmental area of the brain is changed, the effect of morphine and amphetamine in the brain is also changed, probably due to changes in the midbrain dopamine pathway. We study further the mechanisms of drug induced plasticity at the morphological level by Golgi staining the neurons, and at the gene expression level by microdissecting the neurons of interest and running gene chips on them. The gene expression of the VTA dopaminergic neurons was changed at 24 hours after the diazepam treatment. There was a lot of affected genes, and we are now further analysing our findings from the gene chips data, and confirming our candidate genes with other methods like qRT-PCR and in-situ hybridizations. Also the GABAergic regulation of VTA dopamine neurons after diazepam is now being studied by electrophysiological methods. The possible effects of other GABAergic drugs in the plasticity of dopamine neurons are also studied. In order to study whether the activation of synaptic GABA

receptors is needed for plasticity to occur in VTA dopamine neurons or if also the potentiation of extrasynaptic GABAA receptor-mediated transmission is sufficient we tested gaboxadol which, at lower concentrations, is selective for the extrasynaptic receptors. Indeed, also the gaboxadol induced the similar plasticity in the VTA dopamine neurons which was due to insertion of new GluR2 subunit-lacking AMPA receptors on the synapses. Now we are evaluating the possible rewarding/reinforcing properties of gaboxadol by behavioural methods, such as conditioned place-preference and self-administration. These findings were shared and discussed in several international scientific meetings during 2010. At the moment, two manuscripts are being written on the findings. The researchers of the project aim to finish their doctoral theses based on the work in this project. Researchers: *Anne Panhelainen* and *Elena Vaschinkina*. Institute of Biomedicine, University of Helsinki.

211 *Drug users as the Perpetrators and as the Targets of Law Enforcement.*

My Ph.D. study (University of Helsinki) concerns drug misusers' habitual criminality from the perspective of the perpetrators and the police. The main aim is to explain the meanings, motives and values associated to criminal activity by the drug users, and connected to the drug law enforcement by the police. The data consist of two different statistics based on police investigation records, police (20 male officers) and drug user (19 male and 3 female) interviews. In this study, the focus is on the significance of drug criminality on the criminal career. Essential concepts are life style, socialization/stigmatization and criminal career. Besides the themes of marginalization and addiction I discuss the rational and goal-oriented patterns of criminal action. I will analyze conceptions of the police of their role from the perspective of preventive and crime-fighting paradigms. Secondly, I will consider the changes in the role, operational environment and culture of the police in the field of drug policing. Central themes are the role of the police in the process on interpretation crime and selecting criminals, and the symbolic and instrumental meaning of law enforcement. In the concluding article I will aggregate my results, which will show that the habitual criminality of drug users is more linked to their lifestyle than to their addiction. Secondly, I will prove that in the police rhetoric the crime control targeted at user level is usually justified by statements according to which drug use is a threat to public order and safety and that it generates property crime among other types of offenses. Four articles have already been published. The fifth article and the concluding article are in the process of peer-evaluation. The dissertation will be submitted into pre-examination during spring 2011. Researcher: *Tuula Kekki*, The Finnish Foundation of Alcohol Studies.

212 *The Development of Alcohol Policy in Newly Independent Estonia.*

During the year 2010 (the second year of the grant applied) I have been gathering and reading materials, making primary documentary analysis and conducting part of the interviews. Research material is divided into two parts: written documents and open-ended individual interviews. The purpose of the interviews is to obtain new information, as well as to clarify and complement the information that emerged through the study of the written sources. Written documents consist: 1) public health strategy documents; 2) documents produced by interest groups; 3) ministerial working group materials; 4) parliament discussions; 5) legislation (different laws that are related to alcohol issues); 6) media articles from the main dailies; 7) party programmes; 8) development plans of local governments; 9) some other documents from different time periods. The gathered data will be analyzed through three main levels of policy making: 1. Alcohol policy regulations: How different alcohol policy regulations had been used during different time periods (pricing and taxation, regulating physical availability, education and persuasion, altering the drinking context, regulating alcohol promotion, drinking-driving countermeasures, treatment and early intervention)? What kind of regulations had been discussed? Which formal alcohol control measures, i.e. laws and other regulatory measures had been implemented (and when)? My hypothesis is that in the beginning of the 1990s discussion over regulations was uncertain, indefinite and later became more concrete and detailed; also that education and persuasion methods had been more popular and accepted over time. During the last years, more alcohol control measures targeted at demand or alcohol-related problems have become more prevalent. 2. Institutional actors: Different actors (representatives from the ministries, NGOs, political parties, producers, health promotion experts etc.) have different argumentations and preferences while talking about alcohol policy. 3. Background discourses: a) Liberal, individualistic discourse (alcohol as a private issue; restrictions to alcohol production and sale are not justified because of the liberal economic policy); b) Welfare state discourse (universality, solidarity, alcohol as a public issue); c) Culture (traditions, history) discourse. For example, lots of discussions, especially in the 1990s, focused on how to keep up old distillery traditions; should spirit factories be owned by the state or by the private sector; how to protect local alcohol production against the imported ones; d) Realpolitic discourse (for example how much Estonian alcohol policy follows EU directives or principles?). Researcher: *Kersti Kollom*, Tallinn University and Åbo Akademi, Department of Sociology. (kerstiko@hotmail.ee)

213 *The Role of Brain-derived Neurotrophic Factor in the Regulation of Alcohol Drinking.*

Brain-derived neurotrophic factor (BDNF) is a member of the nerve growth factor family of neurotrophins and has multiple tasks in the central nervous system, such as neuronal survival and plasticity, learning, regulation of locomotor activity and appetite, and also in addiction. BDNF signals through TrkB-receptor, and alcohol and other drugs are known to acutely induce them both. The aim of this study is to clarify the role of BDNF in the rewarding effects of alcohol and in the regulation of alcohol drinking. The expression profile of BDNF has been determined in Wistar rats after acute alcohol exposure in a dose-response study (alcohol doses 1,25g/kg and 2,5g/kg) and in a time-course study (time points of 90min, 3, 6 and 24 hours). The levels of BDNF mRNA in the prefrontal cortex, nucleus accumbens, amygdala, hippocampus and ventral tegmental area of both naïve rats and rats exposed to acute alcohol administration were determined with quantitative PCR utilizing SYBR Green detection. The results were presented in the ISBRA 2010 congress in Paris, France and in the Neuroscience 2010 congress in San Diego, USA. A manuscript based on these results is at its finishing stages. The experiment of BDNF mRNA expression is repeated with two rat lines, AA (Alko, Alcohol) and ANA (Alko, Non-Alcohol) which differ in their voluntary alcohol intake. Researcher: *Noora Raivio*, Department of Alcohol, Drugs and Addiction, National Institute for Health and Welfare. (noora.raivio@helsinki.fi)

214 *Investigating Gene-environment Interactions in Alcohol Intoxicated Aggression.*

The focus of the present project is to shed new light on the association between alcohol and aggression by examining main effects of alcohol use and measured polymorphic variations on aggressive behavior, with a specific focus on gene-environment interactions. In other words, the project will investigate if the genotype of an individual influences the effect alcohol in its turn has on aggressive behavior. The study is to date the first one to experimentally investigate interactive effects between alcohol and genes on aggression. Candidate genes for an interaction with alcohol intoxicated aggression include genes related to the neurotransmitters serotonin and dopamine and vasopressin, as well as to the sex steroid testosterone, that have repeatedly been shown to be associated with an increased risk for aggressive behavior. The project was financed by the Finnish Foundation of Alcohol Studies during the years 2009 and 2010. During the year 2009, 120 men (aged 18–30) were tested in laboratory conditions for aggressive behavior. The participants were randomly selected to either a condition where they received alcoholic drinks consisting of a total dose of 0.7g ethanol / kg body weight or a placebo condition. During 2010, another sample of 120

men (aged 18–32) was tested for aggressive behavior in laboratory conditions. First, aggressive behavior was measured when the participants were sober. Next, the participants were able to choose the desired amount of alcoholic beverages (maximum 1,0g ethanol / kg body weight), after which their aggressive behavior was measured again. Using this design we can, besides trying to replicate findings from the first sample collected in 2009, also examine if the effect of polymorphic variants on aggressive behavior is mediated through its effects on the desire to drink alcohol. We have currently submitted two manuscripts for peer-review to international scientific journals, and presented preliminary results from one of these manuscripts on the 40th Annual Meeting of the Behavior Genetic Association in Seoul, South Korea. The abstract of the presentation has been published in the journal *Behavior Genetics*. In addition, we are currently collecting data on aggressive behavior while intoxicated of 60 of the participants in real-life environments. The data-collection is to be concluded in early 2011, after which we will be able to compare results obtained in laboratory settings with behavior in real-life environments. During 2011, we will continue to analyze the data and prepare manuscripts for international scientific journals. Researchers: *Pekka Santtila, Ada Johansson, Bettina von der Pahlen*, Department of Psychology, Åbo Akademi, and *Lars Westberg*, University of Gothenburg, Sweden. (pekka.santtila@abo.fi)

215 *Diversity of Drinking Culture – the Examination of Intoxication, Drinking Practises and Drinking Situations of Women and Men.*

This sociological research investigates drinking habits from the point of view of gender. Even though the differences in drinking between genders have been studied earlier, it is important to point out the differences inside genders, as well. Therefore, the drinking practices, meanings and experiences related to drinking among women and men of different age are investigated in this research. By using the perspective of generation, the research also aims to clarify the changes in Finnish drinking culture. Especially by pointing out changes in drinking among women of different generations, the research adds to the knowledge about the changes in drinking cultures in Finland in the last four decades. The main data of the research consists of 16 focus group interviews. Women and men of four different age groups and of two educational levels have been interviewed separately. The theoretical framework of the study applies theories which discuss gender as a part of self presentation and self expression. During the second year of study, the first article which discusses discourses of intoxication and its changes among young women has been presented at the international Alcohol conference (KBS). The article has been submitted and will be published in the beginning of 2011. The next article, which deals with the norms of drinking among women of three generations, will

be submitted in the end of January 2011. The proceeding of the data for the third article, which relates to drinking practices and meanings related to drinking among women and men, has been started. During 2010 also two co-operative articles have been written. The first one related to drinking habits among young adults has been published in the book "Suomi juo" (2010) and the other one related to intoxication and abstinence among teenagers has been submitted and will be published in the journal *Yhteiskuntapolitiikka* in the beginning of 2011. Researcher: Jenni Simonen, The Finnish Foundation for Alcohol Studies. (jenni.simonen@thl.fi)

216 *Teenagers' Images of Alcohol Use and Social Class Differences Related to Them in Finland and Italy.*

The study focuses on social class differences in the images of alcohol among Finnish 14–16-year-olds, with a comparison to Italian teenagers. The research will provide in-depth knowledge on youth alcohol cultures through comparative qualitative methods. Large cross cultural comparisons have boosted quantitative comparative research in the field of substance use among youth. Still, there is a need for systematic inquiries into the meanings and explanations of new polarizations of teenagers' alcohol use. The international significance of this research is, beyond the substantive objectives, to develop the methodology for comparative qualitative research in the social sciences. This research applies a structured qualitative focus group methodology called The Research Analytical Group Interview (RAGI). Carefully selected clips that correspond to specific research designs are shown to focus groups to stimulate images that the participants already have in their mind. In Finland, there will be twenty focus groups conducted in schools located in the suburbs and city center of Helsinki. In Turin, 10 focus groups from different types of schools have been collected. The research started in 2010 and it will continue until mid-2013. In 2010, the research protocol was prepared with Italian collaborators, the Italian data was collected and data collection in Finland was started, continuing until spring 2011. Researcher: *Anu Katainen*, University of Helsinki.

217 *The Division of Labour between Social Care Health Care, the Prison and the Police in the Handling of Intoxicant Related Harm in Finland and Norway since 1980.*

This dissertation study examines how intoxicant related harm burdens different authorities. It focuses on the division of labour between the health sector, the social sector, the prison and the police in producing intoxicant related over-night stays since the year 1980. The study starts out from the knowledge that the division of labour between these sectors changed in the late 1970s when involuntary treatment increasingly gave way to social service interventions. The article asks whether and what kind of evidence

there is to back up the argument that rehabilitative treatment has been on the decline and involuntary control on the increase during the period under study. The study makes use of register material produced by different authorities. During the first half of the year 2010, the work has focused on how intoxicant related harm transforms into over-night stays with the health authorities, social authorities, the prison and the police in Finland. I have started working together with the prisoner health study project lead by Professor Matti Joukamaa. Professor Joukamaa and his colleagues have agreed to let me use material from three prisoner health studies – from the years 1985, 1992 and 2006 – for two co-authored academic articles. Using these studies enables deeper and more precise knowledge of the use of intoxicants among prisoners. During spring 2010 I have been working on two co-authored articles: the first article deals with the division of labour between the social sector, the health sector, the prison and the police in the handling of intoxicant related harm in Finland since 1980: (Obstbaum Yaira, Lintonen Tomi, Aarnio Jorma, von Gruenewaldt Virpi, Hakamäki Sirpa, Mattila Aino, Vartiainen Heikki, Viitanen Päivi, Wuolijoki Terhi, Joukamaa Matti) is forthcoming in the journal *Yhteiskuntapolitiikka* 1/11. The second article (Lintonen T, Obstbaum Y, Aarnio J, von Gruenewaldt V, Hakamäki S, Kääriäinen J, Mattila A, Vartiainen H, Viitanen P, Wuolijoki T, Joukamaa M.) assesses the way in which the prisoner health studies from different years – 1985, 1992 and 2006 – produce comparable data on prisoners' use of intoxicants. The article has been accepted for publishing and will become a part of my dissertation. I have also discussed the results of my study with colleagues at the doctorate seminar at the institution for Social Studies – the Intervention and the SOVAKO researcher seminar. I have been working with the dissertation between 1st January and 15th September 2010, after which I have been on maternity leave. The Finnish Foundation for Alcohol Studies has supported the work of full-time researcher during this time period. Researcher: *Yaira Obstbaum*.

218 *Alcoholic Liver Cirrhosis: the Interaction between Genetic Factors and Gut Microbiota.*

In Finland, more than 90 % of cirrhosis is inflicted by alcohol. However, only a minority of about 10–20 % of heavy alcohol abusers develop liver cirrhosis during their life, suggesting the possible involvement of genetic and other risk factors. The aim of this study is to find out how intestinal microbiota and genetic factors influence on the development of alcoholic liver cirrhosis. Endotoxin, a constituent of gram negative bacteria, binds to the CD14 receptor in liver Kuppfer cells and can lead to activation of long-term inflammatory response and fibrosis of the liver which can cause alcoholic liver cirrhosis. Our group have shown that CD14 polymorphism correlates with the risk of alcoholic liver cirrhosis. We have now expanded

the study of CD14 gene with more polymorphic loci and with more cases. In addition to the hereditary susceptibility, it has been shown that chronic alcohol abuse can disturb the balance of intestinal bacterial population by shifting it towards to gram negative majority and by increasing the total amount of bacteria. These changes have been reported to interfere with the normal intestinal structure and function. This may increase the bacterial and endotoxin load into the blood circulation. The importance of intestinal microbiota in alcoholic liver cirrhosis will be studied using both autopsy and clinical patient samples. Autopsy series consists of nearly 100 cases of which one third is alcoholic liver cirrhosis, one third alcoholics and the rest are controls. Bacterial translocation from intestines to liver will be studied with the results of PCR and bacterial culturing. According to the preliminary results (n=10), the most common translocated bacteria in cirrhotics is *Clostridium perfringens*. Other possible candidates for translocation are *Bacteroides* sp, *E.coli*, *Enterobacter cloacae*, *Enterococcus* sp. and *Klebsiella pneumoniae*. When cirrhotics were compared with others it was found that gram negative bacteria were more commonly found in livers of cirrhotics than that of others. Endotoxin levels in the portal vein blood correlated with the bacterial findings. The qPCR studies for the intestinal microbiota have already been started. The results will be confirmed in clinical patients. The results (4 manuscripts) will be published in high impact factor, peer-reviewed, international scientific journals. Preparing two of these manuscripts has already started. Researcher: *Sari Tuomisto*, Tampere University, Clinical School, Forensic Medicine. (Sari.Tuomisto@uta.fi)

219 *The Decisive Encounter – Process and Outcome Research of Initial Motivational Encounters at the A-clinic.*

This study approaches, through the means of qualitative discursive research, the dynamics and contents of interaction in initial encounters between counsellors and clients at the A-clinics (outpatient clinics for treatment of addictions). Substance abuse treatment is plagued by high rate of clients dropping out right after the initial encounter with the counsellors. Therefore it is assumed that the quality and content of the first encounters are decisive for the length of treatment and hence its effectiveness. During the year 2010, two oral presentations were given, one in English, one in Finnish. As data gathering proceeded, the analysis of data got more focused. Two manuscripts were written in English and offered to international journals. The first concerned the characteristics of interaction in initial encounters. The second, written together with Maria Rakkolainen, focused on analysing the troubles in communication processes in initial sessions. An article written in Finnish focused on methodological issues and was published in a book titled *Analysing the Interview (Haastattelun analyysi)*. Researcher: *Leena Ehrling*, VTT. (leena.ehrling@helsinki.fi)

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