

HELSINGIN YLIOPISTO
HELSINGFORS UNIVERSITET
UNIVERSITY OF HELSINKI



Department of Psychology

Annual Report 2007

Department of Psychology

Address

P.O. Box 9, (Siltavuorenpenger 20 D)

FI-00014 UNIVERSITY OF HELSINKI

Web-page

<http://www.helsinki.fi/psykologia/>

E-mail

psyko-neuvonta@helsinki.fi

Telephone

Administration +358-9-191 29 511

Tuition +358-9-191 29 515



Annual Report 2007

Cover & layout: Max Ingman

Cover photo: Antti Hulsi

Foreword

Dear Reader,

In keeping with the Universities Act, the mission of the Department of Psychology, University of Helsinki, is to promote free research and scientific education, to provide higher education based on research, and to educate students to serve their country and humanity. In carrying out this mission, the department interacts with the surrounding society and promotes the societal impact of research findings. These principles have again in 2007 been the guidelines in our activities.

The work of the department is mostly evaluated in the light of numbers: the number of publications produced, the number of degrees completed, the amount of external funding brought in. Looking at any of these measures the Department of Psychology can be proud of its achievements. The quality of the work has also been recognized; in 2007 two of the research groups within the department are working under the Centre of Excellence –status. In order to be able to educate students to serve humanity however, more subtle values need to be emphasized as well. The quality of teaching has been chosen a priority within the department and a tailored higher education program has been designed for the teaching staff.

This annual report, available at the Web site www.helsinki.fi/psykologia, consists of two parts. Part I describes the productivity of the department as a whole in the three core areas: research, education and societal interaction. In Part II the individual sections of the department introduce their activities as well as special achievement and awards during the year 2007 in more detail.

We would like to thank Max Ingman, Hilikka Pakarinen, and Otto Lappi for their help in preparing this report.

Laura Hokkanen

Docent
Head of the Department of
Psychology

Christina Krause

Professor
Vice Head of the Department of
Psychology

PART I

University is an employer of teachers, researchers as well as administration and other support staff. Within the faculty of Behavioural Sciences these groups represent approximately one third of the personnel each. The Department of Psychology has a slightly different personnel structure and researchers comprise half of the personnel. During the year 2007 the department staff consisted of 110 calculated person years, see Table 1. If each individual working within the department part time or short term was listed, the number of individuals would approach 180.

Table 1. Staff structure within the Department of Psychology as well as the whole Faculty of Behavioral Sciences (figures taken from the annual report of the faculty, presented in person work years PWY) see <http://www.helsinki.fi/behav/tdk/vuosikertomus/2007/henkilotilasto.htm>

	Department of Psychology		Faculty of Behavioural Sciences	
	PWY	%	PWY	%
professors	8,2	7,4	39,7	8,8
senior and junior lecturers *)	12,1	11,0	131,7	29,3
researchers	29,9	27,1	68,9	15,3
post-graduate researchers	26,4	23,9	66,1	14,7
subtotal teachers & researchers	76,6	69,3	306,4	68,1
IT & technical support	15,3	13,9	33,0	7,4
administration	13,5	12,2	80,3	17,9
other	5,0	4,5	29,2	6,5
subtotal support staff	33,8	30,6	142,5	31,8
total	110,4	100%	448,9	100%

*) including part-time and other teachers

The financial resources of the department have steadily increased over the years as can be seen in Figure 1. Both the budgeted funding and the external funding exceeded 3 million euros in 2007 and combined with additional resourcing (e.g university project funding) our financial status totalled in around 7 million. The research groups within the department of Psychology excel in the acquisition of competed funding and the largest portion comes from the Academy of Finland (over 1.9 million in 2007), EU coming second (900.000 euros).

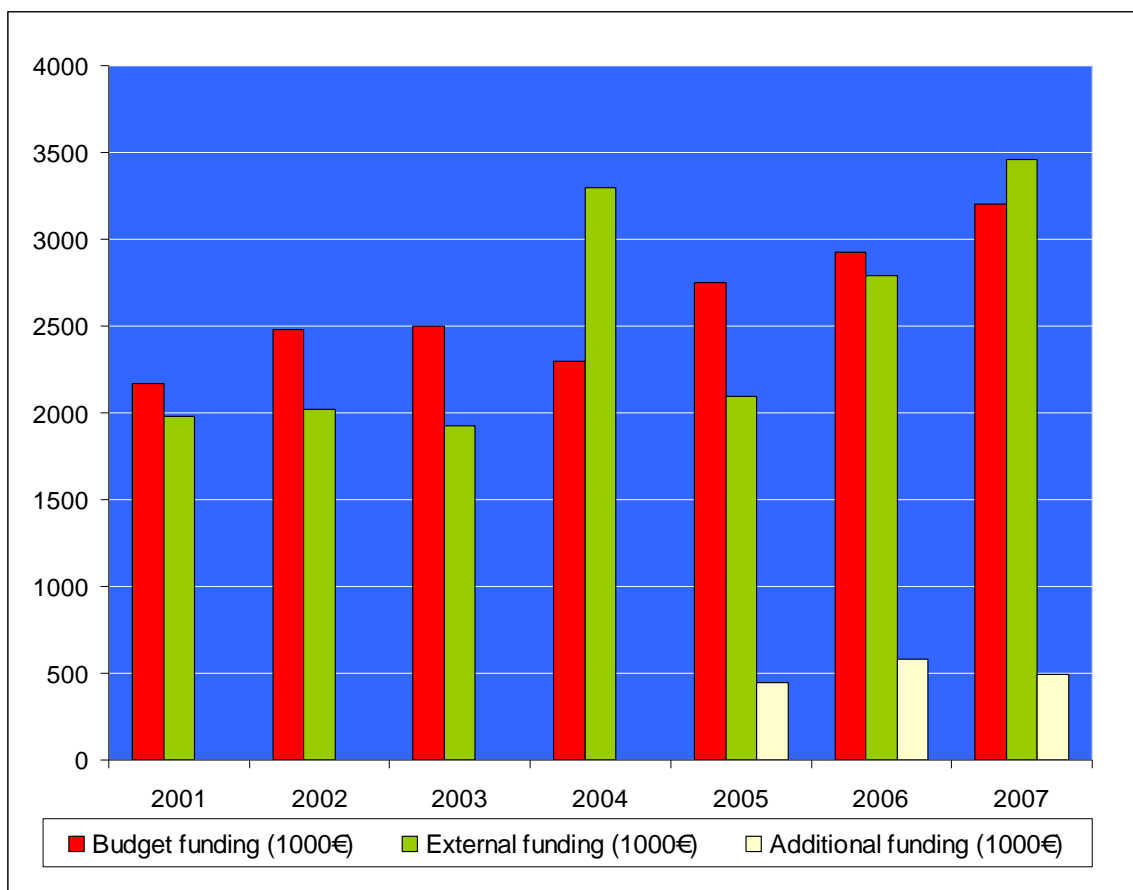


FIGURE 1. The financial resources of the Department of Psychology since 2001. Budgeted and external funding calculated separately. For 2005-2007 also the additional project funding from university and other institutional sources explicated.

SCIENTIFIC PRODUCTIVITY IN 2007

In the area of research the department excels and the numbers of the previous years have again been exceeded. As seen in Figure 2, in the year 2007 the staff of the Department of Psychology published 145 articles in peer-reviewed, mostly international scientific journals (the category B1 in the JULKI database of the University of Helsinki). The scientific productivity at the Department of Psychology is a result of research activities of the Department's teaching staff, doctoral students, post-doctoral researchers, and senior scientists forming over 22 research units and groups of the Department of Psychology. The largest of them is the Cognitive Brain Research Unit, which also coordinates the Helsinki Brain Research Centre, nominated a Centre of Excellence for 2002 - 2007 by the Academy of Finland. The centre is a joint effort of six laboratories involving also Helsinki University of Technology, as well as Helsinki and Uusimaa hospital district. Another research group at the department, Attention and Memory Networks, belongs to the Nordic Centres of Excellence 2005 - 2010, "Cognitive Control: Behavioural and Brain Studies of Cognitive Control in Attention, Perception, Language, Memory, and Emotion". Professor Kimmo Alho is the head of the research group. The Nordic Centres of Excellence have been selected by the Joint Committee for Nordic Research Councils for the Humanities and Social Sciences (NOS-HS).

All research units and groups are organized under the nine sections of the Department listed below (for activities of each unit/group, see

<http://www.helsinki.fi/psykologia/english/research/researchgroups.htm>):

Clinical Psychology

- Clinical Health Psychology
- Forensic Psychology Research Group
- The Clinic Projects in Mental Health

Cognitive Science Unit

- Brain Oscillations and Human Memory research project
- Bilingualism research project
- Lexicon in the Human Brain research project
- Development of thinking and memory research project

Developmental Psychology

- Developmental Psychology Research Group

Neuropsychology

- Apperception & Cortical Dynamics (ACD)
- Attention and Memory Networks
- Early Auditory Skills
- Neuropsychology Research Group

Perceptual and Cognitive Psychology

- Research on Everyday Thinking
- Visual Science Group
- Working Memory and Cognition

Personality Psychology

Personality and Well-being including the following subtitles:

- Gene x environment interactions in a development of personality
- Genetic bases of temperament
- Psychophysiological stress reactivity
- Life-span Development of Coronary Heart Disease

- Psychosocial Factors Predicting Work Stress
- Brain imaging of serotonergic and dopaminergic systems underlying temperament

Psychometrics

- Self Presentation and Values Research Group

Traffic Psychology

- Traffic Research Unit

Psychology of Work, Technology and Organizations

- Centre for Research on Networked Learning and Knowledge Building
- Human Factors and Safety Behavior Group
- Psychology of Digital Life
- Visual Quality

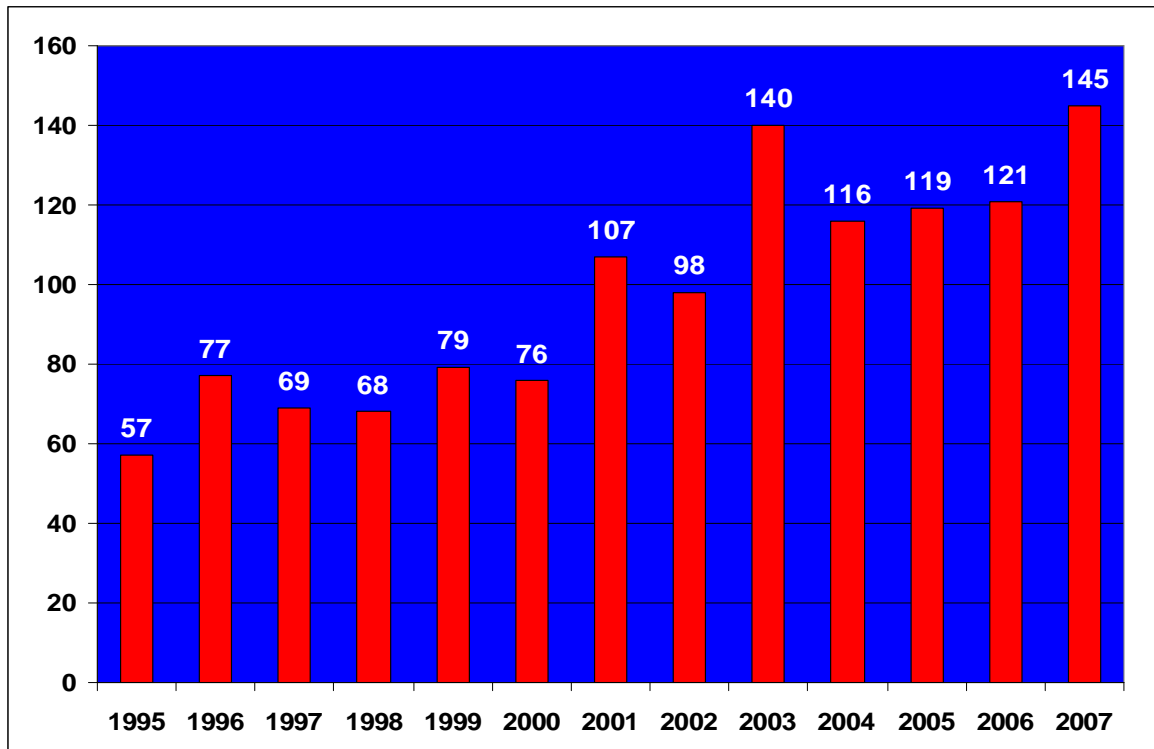


FIGURE 2. Peer-reviewed journal articles produced at the Department of Psychology in 1995-2007 (i.e., category B1; <http://www-db.helsinki.fi/julki/en/>).

In 2007, there were 186 students with Psychology and 36 students with Cognitive Science as their major subject aiming at a Licentiate/PhD degree at the Department of Psychology (Figures 3 and 4).

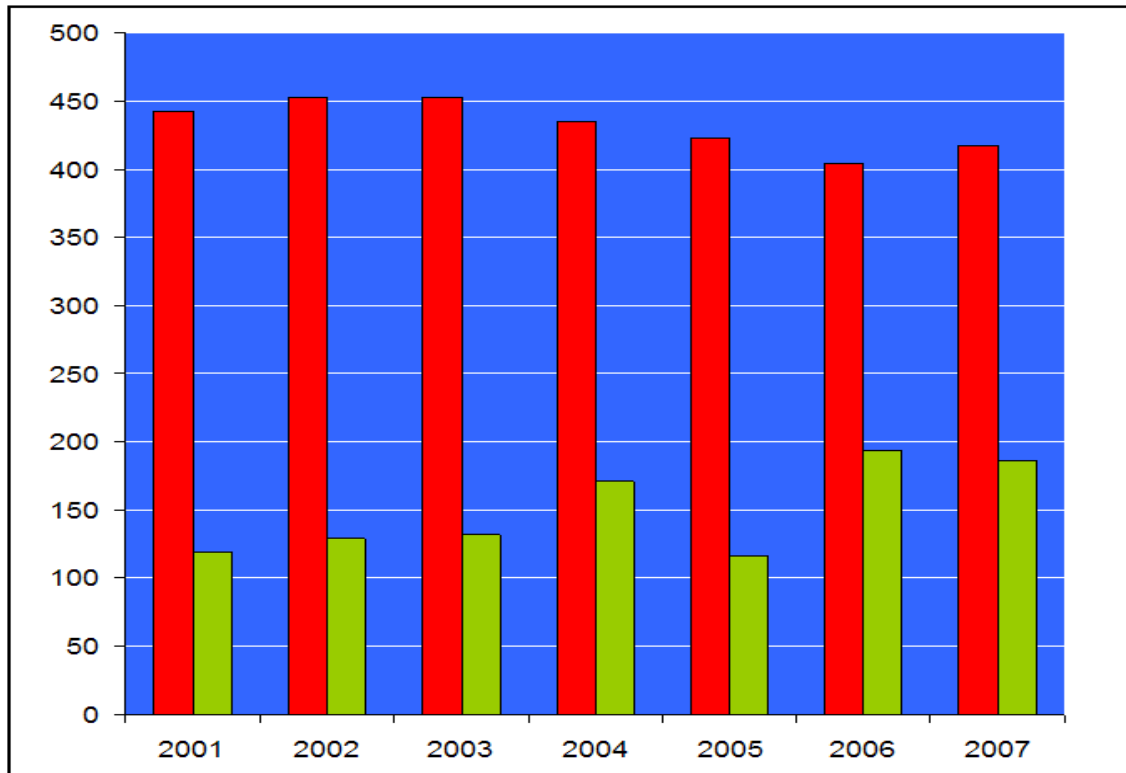


FIGURE 3. The total number of MA (red bars) and Licentiate/PhD (green bars) students enrolled at the Department of Psychology in 2001-2007 with Psychology as their major subject.

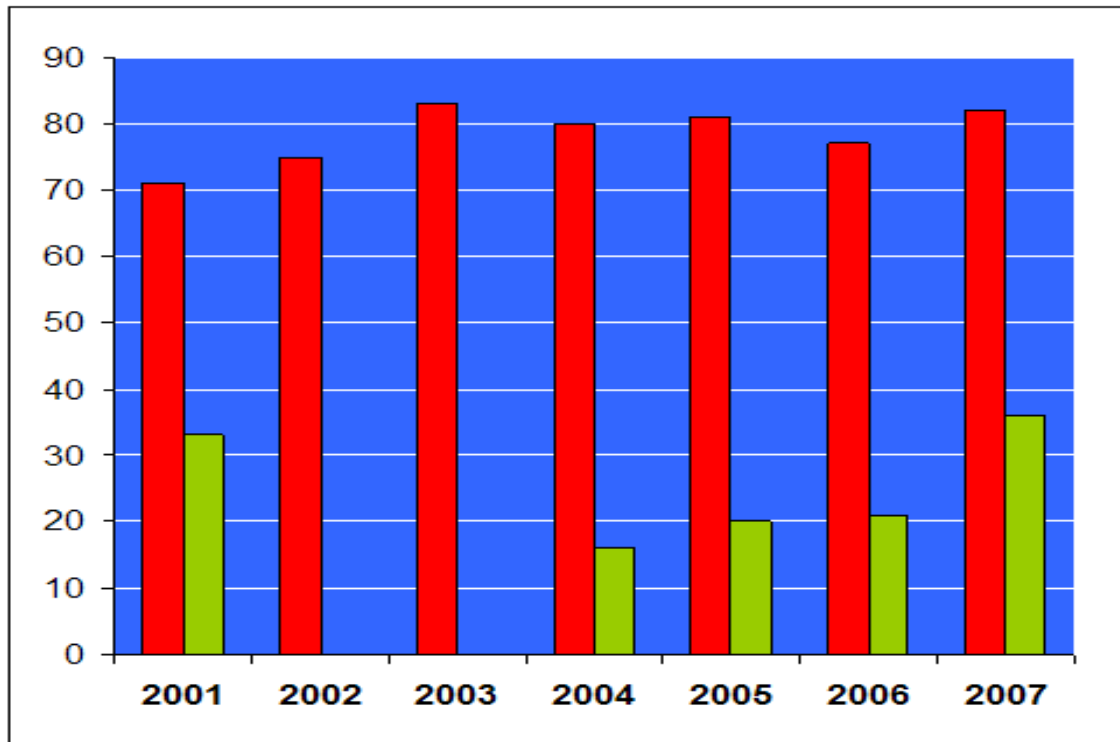


FIGURE 4. The total number of MA (red bars) and Licentiate/PhD (green bars) students enrolled at the Department of Psychology in 2001-2007 with Cognitive Science as their major subject.

Thirteen doctoral dissertations were approved at the Department of Psychology in 2007 (Figure 5). A majority of these theses were prepared in the research units and groups of the Department of Psychology. Most of them consisted of 4 or more scientific articles published in international, peer-reviewed journals and 11 of them got the highest (*laudatur*) or the second highest grade (*eximia cum laude approbatur*) on the 8-step grading scale. In addition, 9 post-graduate students of the Department achieved their Licentiate of Psychology degree in different Specialization Programs organized by Psykonet, the network of the six departments of psychology in Finland.

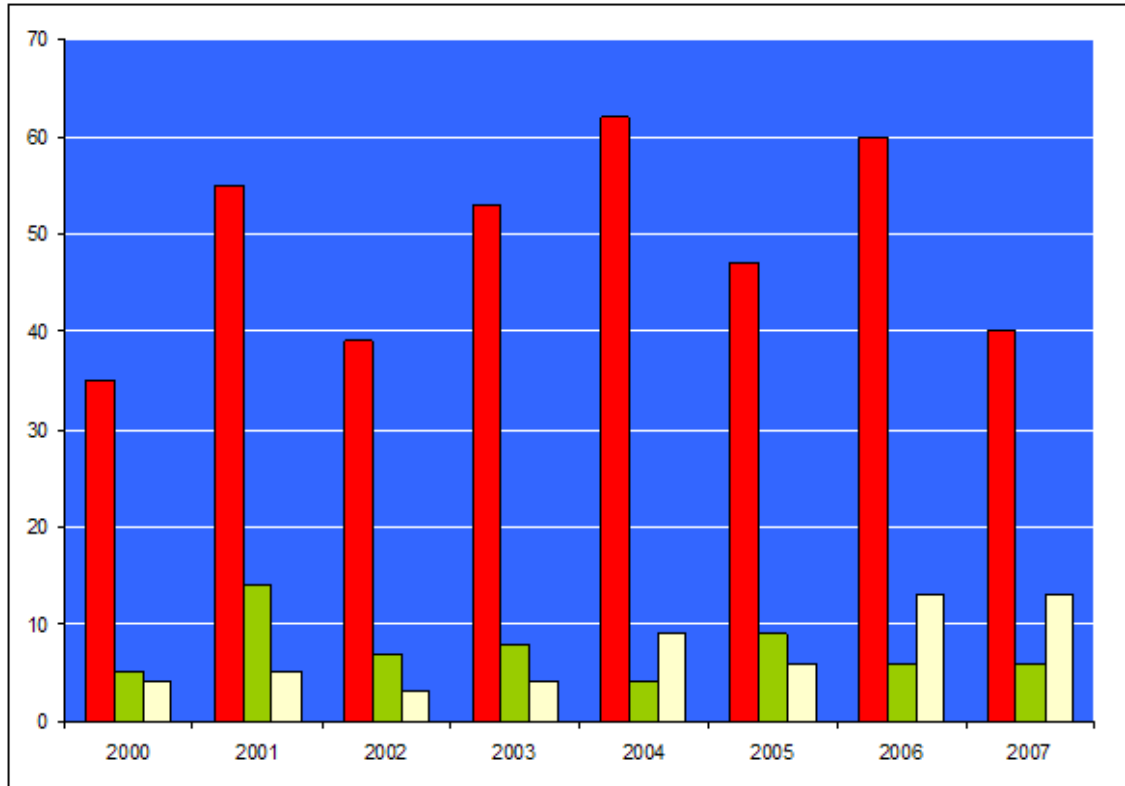


FIGURE 5. *The number of MA (red bars), Licentiate (green bars), and PhD (yellow bars) degrees with Psychology as the major subject obtained at the Department of Psychology in 2000-2007.*

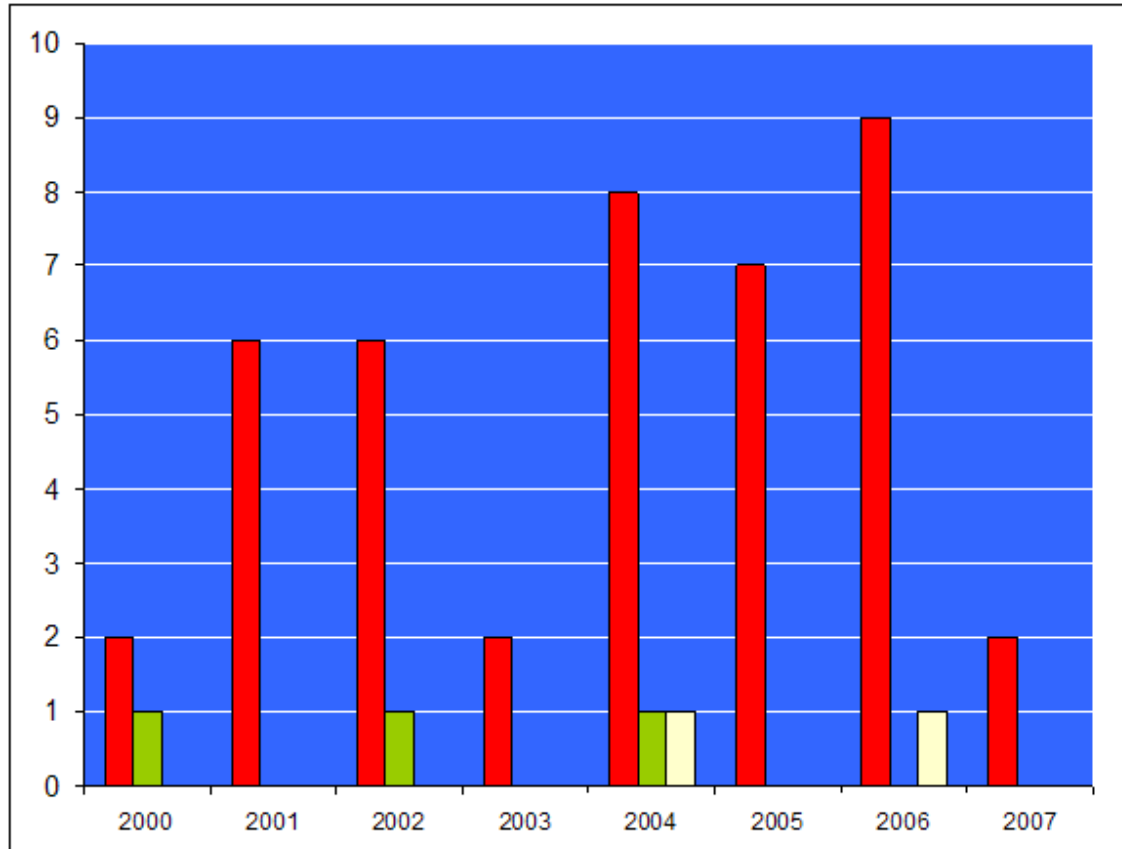


FIGURE 6. The number of MA (red bars), Licentiate (green bars), and PhD (yellow bars) degrees with Cognitive Science as the major subject obtained at the Department of Psychology in 2000-2007.

TEACHING ACTIVITIES IN 2007

In 2007, there were 417 students with Psychology and 82 students with Cognitive Science as their major subject aiming at an M.A. degree at the Department of Psychology (Figures 3 and 4). 42 students completed their M.A. degree in 2007. Of these students, 40 had Psychology and 2 had Cognitive Science as their major subject (Figures 5 and 6).

In the year 2007, a “tailored higher education curriculum” for the teaching staff (originally piloted with the Cognitive Science Unit since the year 2005) was initiated to cover the entire department of psychology. Approximately 20 teachers and researchers participated in these studies in higher education skills in collaboration with the Centre for Research and Development of Higher Education. As a part of their studies in Higher Education, the participants worked together to improve the quality of teaching, assessment of learning and the processing of feedback from students.

Regular meetings among all teachers were initiated in the year 2007. The aim of these meetings is to allow discussions related to teaching and learning over the sections at the department. Additionally, the aim is also to enable discussions and interaction on the teaching at the department with respect to the Bologna process and to avoid overlapping in themes which are taught in the different sections.

The teaching at the Department of Psychology is organized by nine sections emphasizing the main fields of knowledge and expertise at the department. Eight of these sections are in the field of Psychology. They are (in alphabetical order): Clinical Psychology; Developmental Psychology; Neuropsychology; Perceptual and Cognitive Psychology; Personality Psychology; Psychology of Work, Technology and Organizations; Psychometrics; and Traffic Psychology. The ninth section is Cognitive Science, which is the other major subject taught at the Department of Psychology (see also <http://www.helsinki.fi/hum/kognitiotiede/>). The sections are staffed by the holders of teaching positions (professors and university lecturers) and by other members of the Department’s research groups. It should be noted that the master’s and doctoral theses are mainly prepared and supervised within the research groups of the Department. Details of the activities in each section are described in Part II.

INTERACTION WITH THE SOCIETY

The Department of Psychology educates high-quality psychologists and researchers to professional duties in the society. The department has also an active role in the national Psykonet university network, which, among other activities, educates Licentiates of Psychology who specialize in different fields of applied psychology. The Sections of Clinical Psychology and Neuropsychology develop methods for clinical assessment and educate psychologists in their use which impacts the society secondarily via the professionals working in the field. There is a close ongoing collaboration especially with the psychologists employed in the Hospital District of Helsinki and Uusimaa. Also the section of Work, Technology and Organizations conducts extensive collaboration outside the academia, with numerous public and private Finnish organizations, especially M-real and Nokia. Many staff members are also expert members in different national committees and boards, such as the National Authority for Medical Affairs, and are active in the international collaboration.

The personnel of the Department of Psychology appear often in the media and popularize science through books, popular science publications and public lectures. As a result, in the year 2007 professor Göte Nyman received two significant Finnish awards, J.V. Snellman award for advancing the position of magazines and the Association of Finnish Advertisers' award for advancing studies of marketing communication and the Skepsis ry awarded Socrates-prize to Marjaana Lindeman and her research group for work promoting Socratic, rational, thinking. More awards received by members of different sections of the department are listed in Part II.

PART II

ACTIVITIES IN SECTIONS IN 2007

CLINICAL PSYCHOLOGY

General description and staff

Clinical psychology is one of the core areas for students intending to become licensed psychologists. The Section of Clinical Psychology provides all students a learning program which aims to integrate scientific rationale and basic clinical understanding and skills. Two university lecturers, Laura Hokkanen and Hely Kalska, are mainly responsible for the study courses of the section. Professor (*Psykonet*) Juhani Julkunen is responsible for providing licentiate training in health psychology leading to specialized psychologist's qualification. In addition, docent Helinä Häkkinen is lecturing on criminal psychology and supervising master and doctoral theses in her research group. Doctoral or post-doctoral researchers of the section are Richard Ahlström, PhD, Minna-Liisa Luoma, PhD, Cornel Igna and Mila Gustafsson-Lilius, MA (Clinical Health Psychology Group) and Taina Laajasalo, PhD (Forensic Psychology Group). Several other doctoral students working elsewhere are associated with the Section of Clinical Psychology.

Research

The research of the section is organized into four groups. In 2007 the members of the *Neuropsychology Research Group* (Laura Hokkanen, Hanna Jokinen and Hely Kalska; also listed as members of the Neuropsychology Section) published articles concerning neuropsychology of vascular diseases, viral encephalitis, MS, opioid substitution, assessment of memory disorders in *Journal of Neurology*, *Neurosurgery*, and *Psychiatry*, *Journal of Stroke and Cerebrovascular Diseases*, *Neuropsychological Rehabilitation*, *Applied Neuropsychology*, *Journal of the International Neuropsychological Society*, *BMC Clinical Pharmacology* and *Suomen Lääkärilehti*. *Clinical Health Psychology Group* (Juhani Julkunen) aims to explore psychological consequences and coping with severe somatic illnesses as well as psycho-social risk factors of some major somatic illnesses such as coronary heart disease. The projects of the group are conducted by multidisciplinary teams and in collaboration with several other institutions such as Rehabilitation Foundation, Clinics of Cardiology and Oncology, Helsinki University Hospital, Department of

Cardiothoracic Surgery, Tampere University Hospital, and the Finnish Heart Association. Results of the group in 2007 are published in *Quality of Life Research*, *Psycho-Oncology* and *Kuntoutus*.

The Forensic Psychology Research Group (Helinä Häkkänen) focuses on issues that are at the heart of the criminal investigation and prison work and the primary goal is to produce research that is of practical use and have high ecological validity. The research comes out of a community of several researchers and research networks working on topics such as psychopathy, investigative support e.g. offender profiling, criminal geography, mental disorder and crime, stalking, risk assessment and critical incident decision making. Two book chapters were published by Helinä Häkkänen, one about terrorism in a Finnish book, one in English (The Humana Press Inc.) about offence patterns, diagnostic groups and offenders.

The Clinic Projects in Mental Health (Petri Näätänen) have aimed to enhance clinical training and research facilities in authentic clinical settings and to form collaborative programs with health-care units focusing on important clinical problems in practice.

Two PhD theses were completed during the year 2007:

Hanna Jokinen, Determinants of vascular cognitive impairment: White matter lesions, brain atrophy and their neuropsychological correlates

Taina Laajasalo, Finnish homicides and mental disorders: An investigation of offence and offender characteristics.

Teaching

Clinical psychology studies begin from the first study year and continue to the seminar during the field training period. Clinical Psychology I serves as an introductory course at the spring semester of the first year. The goal is to offer research-based knowledge in clinical psychology and the topics include principal clinical paradigms, psycho-bio-social approaches to abnormal behaviour, epidemiological issues, preventive mental care and intervention psychology. Clinical Psychology II during the second study year aims to deepen the understanding of mental health and psychotherapy. Clinical Psychology III consists of three optional courses, criminal and forensic psychology, clinical neuropsychology and psychological interventions. In addition, many students deepen their clinical knowledge by taking advanced theoretical studies in Clinical Psychology IV

The continuum of Professional Skills is obligatory for all students aiming at a Master's degree in Psychology. Courses on four different levels (modules) are organized each year and the teaching strategies emphasize problem-based learning, metacognitive reflection, and group-work. The students usually enter the continuum on their third study year. During the fall term there is a course on Basics of Client Work for Psychologists, where the issues on professional ethics are

discussed and intrapersonal and interviewing skills are rehearsed. During the spring term a course on the Fundamentals of Psychological Testing is organized, where students familiarize themselves with some of the most common test methods. These two courses combined complete the Module I. Module II consists of parallel courses on assessment of mental health and neuropsychological problems of adults and young adults. Module III consists of a Clinical Case Seminar where each student goes out on the field for a full case observation and assessment, presents the case later to the seminar group and also participates in group discussions on other cases. The Section of Developmental Psychology is responsible for organizing the courses pertaining to children on Modules II and III. Module IV consists of optional special courses that vary from year to year such as Trauma Interventions and Clinical Consultation. A Training Seminar for students doing their internship (an obligatory 5-month period of supervised field training as a psychologist) is also arranged every year during both fall and spring term. The internship period and the adjoining Training Seminar are situated at the very end of the studies. The lecturers in Clinical Psychology have close knit connections with the psychologists who work in the field and supervise the students doing their internship, and any issues pertaining to the field training are discussed as they arise. Part of the staff of the Clinical Sector participates also in specialization programs of psychotherapy and neuropsychology by lecturing and supervising post-graduate students.

Special achievements and awards 2007

University lecturer Laura Hokkanen visited the University of Tartu, Estonia, in May 2007 as a part of Socrates teacher exchange and gave an advanced one-week course in clinical neuropsychology to a group of undergraduate students (the basic course had been offered in May 2006).

University lecturer Hely Kalska was admitted the honorary membership of students' organization Kompleksi ry.

COGNITIVE BRAIN RESEARCH UNIT (CBRU)

General description

CBRU is a research unit including four research groups. Minna Huutilainen's group addresses the development of auditory functions, Teija Kujala's group the neural basis of speech perception and its disorders, Risto Näätänen's group auditory functions in the ageing brain, and Mari

Tervaniemi's group the neural basis of music perception. CBRU has been the Centre of Excellence of the Academy of Finland / University of Helsinki several times, during 2002-2007 being the coordinating unit of Helsinki Brain Research Centre including six groups from the University of Helsinki, Helsinki University Central Hospital, and the Helsinki University of Technology. In 2006-2009 Doc. Mari Tervaniemi coordinates EC-funded research consortium "Tuning the brain for music", which consists of six international research groups with specialities in sound technology, auditory cognition, and music emotion.

Staff

The staff includes four senior scientists, three post doctoral researchers, an engineer (50 % working time), a secretary (50 % working time), two nurses (one full time and one with 50 % working time), and about 15 post graduate students. In addition, several visitors and students have been working in CBRU.

Research

During year 2007, CBRU published 44 articles in peer-reviewed international journals, including publications in such high ranking journals as *Cerebral Cortex*. The studies were from the fields of cognitive and developmental neurosciences, clinical neuroscience, and psychopharmacology. New insight was obtained to brain plasticity caused by musical training and intervention of language impairments. Both basic research on auditory functions as well as clinically-oriented work continued. For instance, the aberrant pattern of auditory perception in autism spectrum and language impairments was addressed. The research also included such issues as neuropsychiatric disorders, substance dependence, and psychosocial stress effects. Various complementary brain research methods were used in these studies: electroencephalography, magnetoencephalography, functional magnetic resonance imaging, trans-cranial magnetic stimulation, and animal models. Several senior researchers of CBRU have given invited talks in congresses and participated in organizing congresses as members of congress organization committees. They also have acted as referees for international scientific journals and for funding organizations.

Teaching

The researchers of CBRU gave lectures as visiting lecturers in a variety of courses related to neuropsychology and cognitive neuroscience both at the Department of Psychology and via Psykonet. They also arranged book examinations, reviewed essays and Master's theses, and

lectured in the Faculty's Science Day. Four Master's theses were supervised in CBRU during year 2007, and several Master's theses were in preparation. The grades of the completed theses were one *laudatur* and three *eximia cum laude approbatur*. On the data of the Master's theses, manuscripts are in preparation or have been submitted to international journals with a referee practice, which is the tradition in CBRU. The student is one of the authors in the manuscripts. An authorship in the publication gives a high motivation to the student for carefully carrying out the project. Furthermore, those who continue with post-graduate studies can include the publication in the PhD thesis work. Three post graduate students received their PhD degree in 2007, two of the grades being *eximia cum laude approbatur* and one *laudatur*.

CBRU coordinates *Tempus* Master's neuroscience program "From neuron to cognition". *Tempus* is an international EU-funded program, with partners from Finland, Russia, Germany, and Great Britain, intended for Russian Master's students. Students will have a privilege to practice in the leading laboratories at the University of Helsinki, University of Hamburg, and Saint-Petersburg University.

Special achievements and awards 2007

Satu Palva's PhD thesis received *the Novartis Prize of the Brain Research Society of Finland* for the best PhD thesis in neuroscience. Darja Osipova's PhD thesis received *the Prize of the Faculty of Behavioural Sciences for the Best PhD Thesis of year 2007*. Auli Nirhola's Pro gradu received the prize of *the Faculty of Behavioural Sciences*. Teija Kujala and Risto Näätänen were acknowledged with the Philips Nordic Prize for 2007 for research work on neurodevelopmental disorders.

COGNITIVE SCIENCE UNIT

General description

The Cognitive Science Unit is one of the nine sectors of teaching and research of the Department of Psychology. It is possible to obtain both a bachelor's degree (BA) and a master's degree (MA) with cognitive science as a major. It is also possible to pursue postgraduate studies (Licentiate of Philosophy, Doctor of Philosophy) in Cognitive science. The total number of graduate students in Cognitive Science in the academic year 2007 was about 90 and the annual enrolment of new students is currently 12 students per annum.

Staff

The Cognitive Science Unit staff consisted of one professor, one post-doctoral research fellow of the Finnish Academy, one amanuensis, two doctoral students, one project researcher and several undergraduate research assistants. At the end of the year 2007, Christina M. Krause - after having held this position for a five-year period - was permanently appointed as the professor of Cognitive Science.

Research (results and publications)

The main areas of research in Cognitive Science consist of human memory, its neural basis, development of cognition, biolinguistics, neurolinguistics, and conceptual change in cognitive science education.

The research at the Unit comprised of four research projects: "Brain Oscillations and Human Memory" (funded by the Academy of Finland), "Biolinguistics" (funded by the University of Helsinki and by TEKES), "Lexicon in the Human Brain" (funded by the Academy of Finland) and "Development of thinking and memory" (funded by the Faculty of Behavioural Sciences).

In the research projects, both undergraduate and postgraduate students were employed. The results from these multidisciplinary research projects resulted in 6 publications in refereed international journals in the year 2007.

Teaching

The Unit provided or participated in providing the following courses: Introduction to cognitive science, Experimental course, Cognitive modelling, History & classics in cognitive science I-II, Scientific reasoning & philosophical argumentation, Seminar on neurolinguistics, Psychology of creativity, Psychology of memory & expertise, Seminar on the Imagery debate, Cognitive Ethnography, Neurosciences of music , Proseminars, Master's thesis seminars, Language, meaning and logic, Graduate seminars in Cognitive Science.

Special achievements and awards 2007

Professor Christina M. Krause and amanuensis Otto Lappi completed their studies (60 credits) in higher education skills at the Centre for Research and Development of Higher Education. Close collaboration between the Unit and the Centre continued in the year 2007 in order to develop the

quality and methods of teaching at the Unit. An initiative was made to extend the “tailored higher education curriculum” piloted with the Cognitive Science Unit to cover the entire department of psychology.

In the year 2007 three foreign exchange students attended the Cognitive Science Unit, two within the bilateral student exchange agreement between the Cognitive Science Unit and the department of Cognitive Science of the University of Osnabrück, and one free-mover from Linköping, Sweden. Two cognitive science student spent one academic year in exchange at the University of Osnabruck.

In the year 2007 the cognitive science unit organized an essay-writing competition for Finnish upper secondary students, with the title *The Limits of Human Thought - Are there Such?* The winning essay was published in the students' magazine *Homunculus*.

DEVELOPMENTAL PSYCHOLOGY

Developmental psychology studies are designed to provide students a broad academic background in developmental psychology, and competence in clinical child psychology. The studies are oriented toward the examination of basic theoretical and research issues without forgetting the link to clinical/applied child psychology. Developmental psychology studies also promote interdisciplinary outlook on contemporary problems of human development (e.g., pediatrics, endocrinology, neurology and psychiatry). Studies cover the whole life span starting from the prenatal period and they are linked to the research by Developmental Psychology Research Group. This group grew in 2006-2007 and comprised a professor, a senior lecturer, three post-doctoral researchers, six doctoral students, two research assistants and a research nurse. Year 2006-2007 was highly productive in terms of research, which concerned themes such fetal programming hypothesis, stress reactivity, sleep, psychological consequences of early life traumas, early cognitive development, prematurity, and temperamental development. The Developmental Psychology Research group published several papers in scientific journals targeted on developmental psychology, personality psychology, pediatrics, child and adult psychiatry, psychoneuroendocrinology, psychosomatic medicine, and epidemiology.

Students were encouraged to be actively involved in Developmental Psychology Research Group's projects, which concerned both normative development and aspects relating to developmental psychopathology. Through participating in the research projects students attained most recent knowledge in methodological and statistical approaches to study human

development. In 2006-2007 students were involved in the assessment of attachment security among 1-year –old children as a part of a research-project on the psychological development of prematurely-born children.

Developmental psychology courses in 2007-2008 included Developmental Psychology I-IV, Clinical Child Psychology II and III, and master's thesis seminars and research practicing. Developmental Psychology I included lectures via the Psykonet, the network of the six psychology departments in Finland. Developmental Psychology II was a Web-based interactive course that deepened understanding on developmental psychology. During course II students learned to read critically the latest research articles, and practiced applying this knowledge via problem-based clinical cases. Developmental Psychology III and IV were organized as practical courses combining clinical practice and teaching aiming at deepening theoretical understanding. During 2006-2007 several developmental psychology master's theses were completed.

NEUROPSYCHOLOGY

General description

The research and teaching of the Section of Neuropsychology focuses on various topics of cognitive neuroscience and clinical neuropsychology. Research on healthy adults and children, as well as in neurological patients uses neuropsychological tests, which are also being developed by the staff of the section, behavioral measures of performance, and different methods for measuring human brain activity. These include recordings of electroencephalography (EEG) and event-related brain potentials (ERPs), magnetoencephalography (MEG) and event-related magnetic fields (ERFs) available at the BioMag Laboratory, Helsinki University Central Hospital, and functional magnetic resonance imaging (fMRI) at Advanced Magnetic Imaging Center, Helsinki University of Technology.

In 2007, the section included four research groups: *Apperception and Cortical Dynamics* (ACD) supported by the Academy of Finland, *Attention and Memory Networks* (AMN) supported by the Academy of Finland, national Graduate School of Psychology, Research Funds of the University of Helsinki, and Nordforsk (AMN is a member of a Nordic Center of Excellence), *Early Auditory Skills* (EAS) supported by the Academy of Finland, Finnish Cultural Foundation, and Research Funds of the University of Helsinki, and *Neuropsychology Research Group* (NRG; see also report of activities at the Section of Clinical Psychology), supported by the Academy of Finland, Finnish Graduate School of Neuroscience, Finnish Culture Foundation, and Juselius Foundation. In

addition, some members of the section conducted their research at the Cognitive Brain Research Unit (CBRU; see also the report of activities at CBRU).

Staff (Research group in parentheses)

Professor Kimmo Alho (AMN)

Professor Marit Korkman (NRG)

Professor Teija Kujala (CBRU)

Professor Veijo Virsu (NRG)

Docent Laura Hokkanen, university lecturer (NRG; also member of the Clinical Psychology Section)

Docent Minna Huutilainen, (EAS and CBRU)

Dr. Hanna Jokinen, (NRG; also member of the Clinical Psychology Section)

Dr. Hely Kalska, university lecturer (NRG; also member of the Clinical Psychology Section)

Dr. Marja Laasonen (NRG)

Docent Patrick May (ACD)

Docent Petri Paavilainen, university lecturer (CBRU)

Docent Erja Poutiainen, university lecturer (NRG)

Docent Teemu Rinne, university lecturer (AMN)

Docent Hannu Tiitinen (ACD)

Docent Mari Tervaniemi (CBRU)

Docent Juhani Vilkki (NRG)

Dr. Sari Ylinen (EAS and CBRU)

Mr. Alexander Degerman, M.A., doctoral student (AMN)

Ms. Liisa Klenberg, Psych.Lic., doctoral student (NRG)

Ms. Sonja Koistinen, M.Sc., doctoral student (AMN)

Mr. Eino Partanen, M.Sc., doctoral student (EAS & CBRU)

Mr. Vesa Putkinen, M.A., doctoral student (EAS & CBRU)

Mr. Juha Salmi, M.A., doctoral student (AMN)

Ms. Nelli Salminen, M.A., doctoral student (ACD)

Ms. Johanna Salonen, M.A., doctoral student (AMN)

Mr. Tuomas Teinonen, M.Sc., doctoral student (EAS & CBRU)

Several other doctoral students working elsewhere are associated with the Section of Neuropsychology.

Research (results and publications)

In 2007, the ACD research group published 5 peer-reviewed articles reporting studies on processing of sound location and speech in the human brain and on effects of aging and stroke on such processing. The AMN research group published 5 peer-reviewed articles reporting results from ERP and fMRI studies on brain networks of auditory, visual, audio-visual attention, and contributed to another article on dichotic listening (Nordic Center-of-Excellence collaboration) and to two review articles. New studies in 2007 continued along these lines of research. The EAS group published 8 peer-reviewed articles on the developmental aspects of auditory perception and memory, including review articles on the use of MEG in neonatal and child studies. In addition, the first results of follow-up studies of children's musical development were published. The publications of NRG included 18 peer-reviewed research articles, as well as several book chapters, edited books, and tests. Published research results included findings concerning cerebrovascular and dementing disorders, validity of clinical neuropsychological tools, language impairment and fetal alcohol spectrum disorder in children, effects of opioid substitution treatment in adults, and effects of maternal epilepsy treatment on children. New research projects included further development of assessment tools, dyslexia and ADHD in adults, ADHD in children, and other projects.

Teaching

The Section of Neuropsychology is responsible for courses in neuropsychology and cognitive neurosciences. All teaching is research oriented and emphasizes methodological skills. Tuition of professional practice in clinical neuropsychology is described elsewhere by the Section of Clinical Psychology. The first-year studies of psychology include two Introductory Courses of Neuropsychology (Neuropsychology I and II). The courses consist of lectures, the textbook *Biological Psychology* by Kalat, and exercises in neuroanatomy with Sylvius Pro software. The courses are complemented by a series of lectures on Special Topics in Neuropsychology given via video conferencing by experts in neuropsychology at different departments of psychology in Finland. This course is coordinated by Psykonet, the national university network in psychology. The Advanced Course of Neuropsychology and Cognitive Neuroscience (Neuropsychology III) of the second study year brings together cognitive brain research and clinical neuropsychology. The

course consists of lectures and, among other readings, the textbook *Cognitive Neuroscience: The Biology of Mind* by Gazzaniga, Ivry, and Mangun. This course is complemented by optional Experimental and Advanced Courses in Cognitive Neuroscience, where students conduct experiments in the EEG/ERP (event-related potential) teaching laboratory. They report results from these experiments at the annual Day of Science of the Department of Psychology.

Post-graduate specialization in clinical neuropsychology is provided together with Psykonet, the national university network in psychology. The four-year program contains workshops and seminars on neurocognitive disorders, neuropsychological assessment and rehabilitation, supervision of clinical work, and tuition of a post-graduate thesis, called the licentiate thesis.

In addition to supervision of doctoral theses several members of the Section of Neuropsychology participate in teaching and administrative activities in graduate schools, e.g., the national Graduate School of Psychology and the Nordic-Baltic Doctoral Network in Psychology.

Special achievements and awards 2007

NEPSY II, a comprehensive neuropsychological assessment for children, with prof. Marit Korkman as the first author, was published in USA. In Spring 2007, prof. Kimmo Alho was on a research visit at the University of California, Davis, where software tools were developed and applied in meta-analyses of fMRI studies on auditory-cortex functions in collaboration with prof. David Woods and colleagues.

PERCEPTUAL AND COGNITIVE PSYCHOLOGY

General description

Cognitive psychology is a subfield of psychology that describes, explains and predicts how people acquire, process, store, and use information. Perceptual psychology is a branch of cognitive psychology that focuses especially on processing of sensory information. Other topics in cognitive psychology include attention, problem solving, creativity, decision making, language, consciousness, imagery, memory, thinking (knowledge, reasoning, beliefs, concept formation), and evolution of cognition, of which the last three also represent the expertise of the personnel in the Perceptual and Cognitive Psychology section.

Staff

The personnel of the section consists of three university lecturers, one post-doctoral researcher, one university instructor, nine doctoral students, one teaching assistant, *rotating professorship (shared affiliation)* as well as adjunct instructors and visiting researchers.

Hyvärinen Aapo, *rotating professorship (shared affiliation)*

Kalakoski Virpi, adjunct instructor

Kanerva Kaisa, postgraduate student

Kilpeläinen Markku, postgraduate student

Kurki Ilmari, university instructor

Leikas Sointu, postgraduate student

Lindeman Marjaana, university lecturer

Mäkelä Tommi, teaching assistant

Nurminen Lauri, postgraduate student

Peromaa Tarja, university lecturer

Saarinen Jussi, university lecturer

Salmela Viljami, postgraduate student

Service Elisabet, researcher

Simula Anni, postgraduate student

Svedholm Annika, postgraduate student

Vainio Lari, post-doctoral researcher

Research

There are three research groups in the section: Working Memory and Cognition, Visual Science Group, and Research on Everyday Thinking (incl. a) Psychology of superstitions, and b) Risk perceptions and motivation).

Visual Science (Vi-Sci) Group

The group studies human visual processing using psychophysical methods. Research topics include brightness processing and pattern vision; especially lateral interactions at early processing levels and top-down influences, integration of local features into perceived global form, and influence of visual processes on planning and controlling hand movements.

Recent findings of the Visual Science group:

1) We have developed a novel method to estimate the stimulus features that determine perceived brightness: using the classification image method with subjective brightness matching task. The classification images reveal a peak inside the edge of the patch, showing directly that the brightness is determined by the edge information.

2) Masking Benary's and White's brightness illusions with narrow-band noise revealed narrow orientation tuning of brightness perception: brightness of an object can be diminished when only some of the objects edges are masked.

3) We measured psychophysically and in fMRI size tuning functions (i.e. responses as a function of stimulus size) for sine wave gratings. The measured tuning functions are qualitatively similar and resemble macaque single cell data. Further, all the data can be simulated with a simple computational model.

Working Memory and Cognition

The group studies working memory in different contexts: the role and representations in language learning and use, as well as in expertise and in cognitive aging. It organises seminars with other cognitive psychology researchers in Finland together with undergraduate and post-graduate students.

Recent data concern the interface between long-term and short-term memory in immediate verbal recall as well as tasks combining information processing and storage. Collaborations with other groups include research on neural correlates of phonological processing and short-term memory in developmental dyslexia. A new project concerns comparison of children's and adults' memory in foreign-language learning tasks.

A book by Virpi Kalakoski, covering recent findings on memory, was published ("Muistikirja"). The book is intended for both academics and for a wider audience.

Research on Everyday Thinking

Roughly half of people in many Western countries, including Finland, still believe in such phenomena as devils, ghosts, angels, life after death, spiritual healing and telepathy. In spite of their prevalence, very little has been known about the origins of the beliefs. Even the terms paranormal, magical, supernatural, and superstition have remained to be adequately defined.

We have conducted a set of studies designed to examine the enchantment of paranormal beliefs. First, we brought together a range of paranormal, superstitious, magical, and supernatural beliefs (e.g., beliefs in spirits, witches, God, telepathy, astrology, omens, rituals, faith healing, psychokinesis etc), and found that all beliefs could best be described by one factor indicating a general tendency to believe in paranormal phenomena . Moreover, we were able to explicate a theoretical framework where paranormal, supernatural, superstitious, and magical beliefs were differentiated from other unfounded beliefs by defining them identically as a confusion of core knowledge about physical (=material, non-living), biological (=living) and psychological (=mental) phenomena.

Using a variety of techniques, we showed that paranormal believers accept more violations of core ontological distinctions than skeptics do. These confusions discriminate believers from skeptics better than any other personality, cognitive, motivational or demographic variable studied. Our results showed, for example, that believers attributed life to energy and lifeless objects (e.g., stones) and explained biological processes (e.g., walking) in terms of an organ's desire ("a foot wants to move"). More than skeptics, believers also assigned intention to random and artificial events like fog or a server failure, they accepted that mental contents operate like physical objects, and that physical energy, water, or furniture may - literally, not only metaphorically - have psychological attributes such as desires, knowledge, or a soul. Thus, the believers endorse category mistakes as they attribute categories with properties that belonged to another ontological category.

Teaching

The Section of Perceptual and Cognitive Psychology is responsible for providing all psychology students with basic understanding of human cognitive and sensory processes and the basic skills in experimental methods and behavioral laboratory techniques. During the first year of studies the students take an obligatory course both in perception and in cognitive psychology. The courses are open for all university students. The courses are large, student oriented, and problem driven. Course websites make it possible to also apply interactive teaching methods in small groups. Besides all-round education, the teaching in the section is based on the personnel's expertise in the following areas: Sensation and perception, experimental psychology, writing research reports, psychophysical methods, scientific and everyday reasoning, evolution of cognition, intuition and dual-process cognition.

Experimental methods and behavioral laboratory techniques are taught in two phases in hands-on workshops in student laboratories. The equipment used in student laboratories meet the

standards of research laboratories in cognitive psychology and perception. The laboratory exercises are closely tied to the preceding or simultaneous classes on cognition, perception and also partially to neurosciences. The compulsory part of perception and cognition culminates in an annual student conference: Day of Science. The students, working in groups of 3-4, present their results from their experimental laboratory course in the format of a typical international scientific conference; 15-20 minute talks with discussion and poster presentations. An invited senior scientist gives a keynote talk. The audience includes all first-year students.

The interested students can take intermediate and advanced classes in perception and cognition and prepare the M.A. and Ph.D. theses in either perception or cognition. In 2007, and six master theses and one PhD thesis was completed.

Special achievements and awards 2007

The visual stimulus generator of the psychophysics laboratory was updated to the ViSaGe, the top of the field equipment by Cambridge Research Systems. ["ViSaGe is the Gold Standard visual stimulus generator and is based on 20 years of development. It has been used in literally thousands of experiments worldwide and is cited in the leading peer-reviewed journals (<http://www.crs ltd.com/catalog/visage/overview.html>)].

Skepsis ry awarded Socrates-prize to Marjaana Lindeman and her research group (Research on everyday thinking) for work promoting socratic, rational, thinking.

PERSONALITY PSYCHOLOGY

The Section of Personality Psychology provides three courses on personality psychology. Personality Psychology I, organized in collaboration with Psykonet, focuses on major concepts and theories of personality. In this course, the students are acquainted with the history and major applications of personality psychology. The second course, Personality Psychology II, introduces personality in context, i.e., how personality affects mental, social and somatic well-being. The focus is on issues such as gene-environment interaction in personality development, psychophysiology of personality and well-being, as well as the role of personality in work stress and health. The third course, Personality Psychology III, covers the development and biological basis of personality. The focus is on temperament, its neuroregulatory and genetic bases, and a development through the lifespan. In addition, its associations with other domains of life such as school success and somatic and mental well-being are included. In addition, the course of

occupational health psychology introduces the major theories and research evidence regarding the impact of job contents, job design and workplace social relationships on employee well-being, job stress and health. The courses of personality psychology rely heavily on the latest scientific knowledge. Research made by the departmental research groups of "Personality and Well-being" and "Psychosocial Factors Predicting Health" form a central part of personality teaching. Starting from the Personality Psychology II course, the most recent scientific articles are used as a central source of course material. The teaching emphasizes the connection of personality psychology with closely related fields of psychology, such as clinical, biological, and developmental psychology. The Section of Personality Psychology organizes both undergraduate and post-graduate seminars. The section produces annually about 10 Master's theses. The undergraduate students are offered the possibility to get incorporated with the section's own research projects, and most Master's theses are done within the section's own research data. The section has produced several doctoral dissertations.

Special achievements and awards 2007

During the year 2007, two doctoral dissertations were accepted, both of them with the highest grade (laudatur). Jokela, Markus - On the environmental genetics of depressive symptoms: Focus on two serotonergic genes, the one got the prize of "the best thesis of the University of Helsinki of the year 2007" and Hintsanen, Mirka - Work stress and early atherosclerosis: Do genetic background and pre-employment risk factors explain conflicting findings?, the other the prize of "the best thesis of faculty of Behavioral Sciences of the year 2007."

PSYCHOMETRICS

The Psychometrics section is responsible for the teaching of statistics, as well as the coordination of this teaching. The section also helps students and researchers in methodological questions.

The research topics are primarily in the area of measurement. More specifically, in the development of values and personality scales, and in the understanding of threats to measurement validity, such as socially desirable responding. However, we have also conducted some values research. The results of that research show that although values do predict behaviour, value-behaviour relations are qualified by dispositional factors, such as adherence to social norms, and by situational factors, such as whether or not

one has power. We are currently studying in more detail the links between values, situations, and behaviour.

Staff

Markku Verkasalo, university lecturer

Jari Lipsanen,

Pertti Keskivaara,

Pekka Lahti-Nuutila

Jan-Erik Lönnqvist postgraduate student

Nina Koivula postgraduate student (half with department of Social Psychology)

We arranged a biweekly research seminar together with Professor Klaus Helkama from the Department of Social Psychology, University of Helsinki. About four master students and two doctoral students regularly attended the seminars. Socrates teacher exchange co-operation took place with the Brunel University, London and the University of Tartu, Estonia. Research co-operation was with professor Sampo Paunonen from the University of Western Ontario, Canada, with the Experimental Economics Laboratory of the University of Bonn, and with Kenn Konstabel, Department of Psychology, Tartu.

Our recently published articles have concerned measurement of social desirability, the effects of volunteer bias on personality research, self-enhancement, conformism values, and the development of a two-dimensional measurement model for values.

More information about the research can be found on: www.helsinki.fi/psykologia/arvot.

Teaching

The Section of Psychometrics was responsible for instructing three obligatory courses:

The Basics of Statistical Data Management, Practical Course in Psychological Research, and Analysis of Variance Course. Furthermore, three obligatory courses (the Second Course in Statistics and Applying Statistical Methods I: Measurement and Collecting Statistical Data and Multivariate Data Analysis) were organized together with the Department of Mathematics and Statistics, University of Helsinki. Approximately 60 - 70, mostly students of psychology or cognitive science, completed each of these courses. And the section also participates to teaching of the basics of Computer and Information Technology with the other departments of the Faculty of Behavioral Sciences.

Optional courses arranged in the academic year 2006-2007 were as follows: Advanced Statistical Data Management , Method Instructor Course, Applied Psychology Research Course, Qualitative Methods (in collaboration with Psykonet) and Introduction to Statistics (in collaboration with the Department of Mathematics and Statistics). Information technology and virtual learning environments were increasingly used in all aforementioned courses.

The section also counselled undergraduate students, about 30 - 40 graduate students, about 20 - 30 licentiate / doctoral students, and the research staff of the department, in problems related to methodology, statistical analyses, and information technology.

The Section of Psychometrics develops admissions procedures in collaborative project funded by the Ministry of Education. Other partners in this cooperation are the Faculty of Behavioural Sciences and the Cognitive Science Unit at the Department of Psychology at the University of Helsinki, the Department of Psychology at the University of Tampere and the Faculty of Medicine at the University of Turku.

Special achievements and awards 2007

Students of psychology named Markku Verkasalo, with two other teachers, as the teacher of the year 2007.

TRAFFIC PSYCHOLOGY

The Section of Traffic Psychology provides an annual Introductory Course in Traffic Psychology, with basics in traffic behaviour, road accidents, and accident theory, and an Advanced Course in Traffic Psychology which focuses on one or more specific topical problems in the area.

Additionally, the section arranges an experimental field course in cognitive (traffic-related) psychology that provides psychology students an opportunity to see and perform experimentation in real-life settings. In the academic year 2007-2008, this course was arranged in cooperation with the Helsinki Polytechnics Stadia, as a part of the Citycab development program (<http://www.citycab.stadia.fi/www/en/index.php>) . Based on track tests, the aim of the course was to evaluate driver and passenger comfort and usability in three different taxicab concepts.

WORK, TECHNOLOGY AND ORGANIZATION PSYCHOLOGY

The section of Psychology of Work, Technology and Organizations studies and teaches basic knowledge in work and organizational psychology, virtual collaboration, quality experience, game experience, collaborative learning environments, safety behavior and socially distributed nature of human cognition. The section teaches a continuum of four courses called Human, organizations and technology I-IV. Most of the research and part of the teaching are conducted in collaboration with other universities and private companies. The section has approximately 35 researches, with one professor with the University of Helsinki budget funding and all the others with self gained project funding from EU, Academy of Finland, TEKES, science foundations and private companies.

The section consists of three research groups: Psychology of Evolving Media and Technology (POEM), Human Factors and Safety Behavior Group and Centre for Research on Networked Learning and Knowledge Building. During the year 2007 POEM has had extensive collaboration with numerous public and private Finnish organizations, especially M-real and Nokia. Group has offered innovative image quality measurement methodologies for both of these companies and conducted related subcontracting work. Collaboration in the study of 3D vision and movie technology continued with the Graduate School of Global Information and Telecommunication Studies at Waseda University, Japan. The study involves also Japanese ICT companies.

The Human Factors and Safety Behavior group continued collaboration with the Middle East Technical University in Turkey with PhD student exchange and research projects.

The Centre for Research on Networked Learning and Knowledge Building conducts national and international projects with schools and companies on enhancing information and communication technologies in education, collaborative learning environments, inquiry learning, and network expertise. During 2007 The centre continued a large EC/IST funded Knowledge-Practices Laboratory (KP-Lab) project for years 2006-2011, with a total budget of 11.2 million euros and 22 partners from 14 countries.

Special achievements and awards 2007

POEM member Jari Takatalo's article concerning game experiences was chosen as 4th most important study on year 2007 in the Game Developers Conference. The IBQ method developed in POEM gave birth to collaboration with leading camera circuit developers in the world. The IBQ method has also raised wider international interest: in Tokyo there was a workshop in autumn 2007 about the IBQ method with 150 participants from universities and industry. Joint projects with new European partners also started: Technische Universitaet Ilmenau, Università degli Studi Roma TRE, Université de Nantes, Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung and Bilkent University. Leader of POEM, professor Göte Nyman received two significant finnish awards on spring 2007: J.V. Snellman award for advancing the position of magazines and the Association of Finnish Advertisers award for advancing studies of marketing communication.